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# The Impact of a Health Education Program on the Attitudes of African-American Hypertensive Clients Regarding Adherence to a Prescribed Medical Regimen

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**THE IMPACT OF A HEALTH EDUCATION PROGRAM  
ON THE ATTITUDES OF AFRICAN-AMERICAN  
HYPERTENSIVE CLIENTS REGARDING ADHERENCE TO A  
PRESCRIBED MEDICAL REGIMEN**

**by**

**TERESA Y. MCPHERSON**

**THESIS**

**Presented to the Graduate Faculty of**

**Incarnate Word College**

**in Partial Fulfillment**

**of the Requirements**

**for the Degree of**

**MASTER OF SCIENCE**

**INCARNATE WORD COLLEGE**

**May 1995**

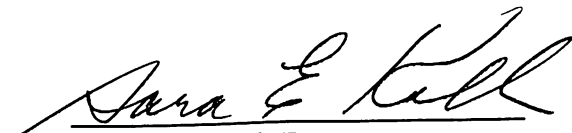
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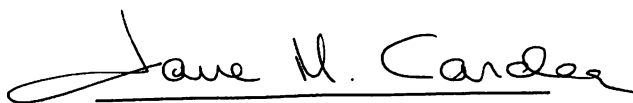
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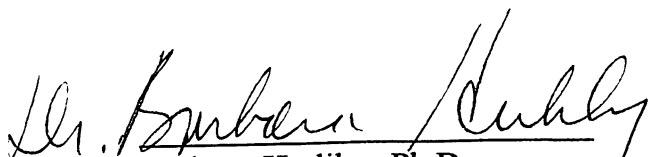
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## **Acknowledgments**

I would like to acknowledge the many individuals who contributed their time, effort, and knowledge in assisting me through this research process.

First my deepest gratitude to Dr. Sara Kolb, who as thesis chair, provided countless hours of invaluable guidance, support, and expertise through all phases of my thesis development. My sincere appreciation to Dr. Jane Cardea and Dr. Barbara Herlihy, who as committee members, provided me with expert direction through their comments, suggestions, and draft reviews.

To the staff at Ella Austin Health Center and Mrs. Alva McNeal, former Executive Director, thank you for allowing me access to your facility. A special note of thanks to Mrs. Gloria Nichols (clinic manager) and Mrs. Sara McNary (health educator), for your friendship, dedication, and commitment to my project.

To my husband Robert, and son Tyler, for all your love, understanding and patience. Finally, to my mother, your words of encouragement, support, and unconditional love has made it possible for me to accomplish this thesis and so much more.

## **Abstract**

# **The Impact of a Health Education Program on the Attitudes of African-American Hypertensive Clients Regarding Adherence to a Prescribed Medical Regimen**

**Teresa Y. McPherson, R.N., B.S.N.**

**Incarnate Word College**

Despite increased public awareness and improved treatment in hypertension, poorly controlled hypertension continues to be a significant problem especially among blacks and other minority populations in the United States (Shea, Misra, Ehlich, Field, & Francis, 1991). On the basis of different experiences, people may form different beliefs and, therefore different attitudes about the consequences of performing or not performing a behavior (Ajzen & Fishbein, 1980). Studies have indicated that a variety of factors such as health beliefs contribute to behaviors that may ultimately decrease the patient's adherence to therapy (Hershey, Morton, Davis, & Reichgott, 1980). Therefore, the effective use of educational strategies should influence beliefs and attitudes, thereby increasing the probability that an individual will acquire behaviors critical for the management of their disease.

This quasi-experimental study examined the effect of an educational program on the attitudes of hypertensive African-American clients regarding their adherence to a prescribed medical regimen. Using a one group

pretest-posttest design, the Miller Attitude Scale measured favorable and unfavorable attitudes toward performing regimen prescriptions for taking medications, following a prescribed diet, engaging in activity, modifying response to stress, and quitting smoking. Data analysis of a paired t-test between pretest mean scores and posttest mean scores, indicated an overall increase in favorable attitudes toward regimen prescriptions for medication, diet, activity, and stress, but not smoking.

The results of this study suggest that health education programs aimed at increasing awareness and knowledge of hypertension may influence attitudes about intentions to follow a prescribed medical regimen. Therefore, in planning education programs, health care providers must focus on individualized assessments of beliefs and attitudes that may be of particular concern for the client in order to increase their likelihood of adhering to therapy.

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## **CHAPTER I**

### **INTRODUCTION**

Hypertension is a major health problem in the United States today affecting well over 63 million people (American Heart Association [AHA], 1992). In 1989, hypertension was directly responsible for 32,000 deaths and contributed to 147,000 stroke deaths, 498,000 coronary deaths, 22,000 renal deaths, and 35,000 sudden deaths. Furthermore, hypertension contributes to over 1.25 million heart attacks and 500,000 strokes each year (AHA, 1992; "Inferences From Secular Trend Analysis," 1992). Sometimes referred to as the "silent killer," hypertension may go undetected for years exhibiting few if any symptoms. However, the major adverse clinical outcomes, as a result of uncontrolled hypertension, namely stroke, heart disease, and renal disease, are devastating to the client, the family, and the community (Strong, 1988).

African-Americans are especially affected by this disease and its consequences. For example, hypertension in blacks, as compared to whites, is characterized by an earlier onset, greater severity of complications, higher mortality rates, and less adequate control (Keller, 1990; Ludescher et al., 1993). Despite increased public awareness and improved treatment in hypertension during the past two decades, morbidity and mortality rates continue to be alarmingly high among blacks (Smith, 1989).

### **Statement of the Problem**

Poorly controlled hypertension continues to be a significant problem, especially among blacks and other minority populations in the United States (Shea, Misra, Ehlich, Field, & Francis, 1991). Although hypertension is the major treatable risk factor for stroke, death rates from stroke remain approximately 66% higher in blacks than in whites (Cooper & Caplan, 1991). Coronary artery disease, another major consequence of uncontrolled hypertension, accounts for 25% mortality in blacks (Keller, 1990). Furthermore, it has been suggested that the incidence of hypertension-induced end stage renal disease is at least 17 times greater in blacks than in whites (Livingston, 1993).

The National Heart, Lung, and Blood Institute estimates that half of the hypertensive clients drop out of treatment within one year; drop out rates among black hypertensives is believed to be much higher (cited in "Black Churches Widen Scope," 1988). Twenty-five percent of the black population has uncontrolled hypertension as compared to 16% of other Americans. As a result of uncontrolled hypertension, African-Americans experience mortality rates 6-13 times greater than White-Americans (Francis, 1991; Livingston, 1993).

The continued disparity in morbidity and mortality due to hypertensive-related conditions in African-Americans is well documented in the

literature. Many factors are known to contribute to the problem of nonadherence to therapeutic regimens among black hypertensive clients. Foremost among these factors are socioeconomic-related barriers to effective health care such as poverty, inaccessibility to medical care, lack of health insurance, and low educational attainment (Branche, Batts, Dowdy, Field, & Francis, 1991; Livingston, 1993). Psychological and sociobehavioral variables such as beliefs about susceptibility to disease and benefit of treatment, social influence, provider-patient relationship, and personality characteristics have also been cited as possible determinants of adherence or nonadherence to therapeutic regimens (Becker & Maiman, 1975; Hershey, Morton, Davis, & Reichgott, 1980; Reichgott & Simons-Morton, 1983).

For example, since hypertension is virtually symptomless there is little to no feedback to the client in terms of the efficacy of treatment (Reichgott & Simons-Morton, 1983). There is evidence that patients tend to vacillate with treatment over time and those who have been in treatment over five years are less likely to be compliant (Reichgott & Simons-Morton, 1983).

### **Purpose**

Researchers continue the quest to understand determinants of healthy behaviors. For example, for all populations it is clear that by adopting a lifestyle of positive health behaviors one can promote a higher level of health and prevent or delay the onset of chronic illness (Pender & Pender, 1986). Patients who actively participate in the management of their disease can reduce symptoms, lower the risk of complications, and increase their quality of life (Given, Given, & Coyle, 1984). Furthermore, it is important to understand how behavior is mediated by attitude in order to understand the determinants of adherence and nonadherence behaviors. Therefore, the purpose of this study was to look at what impact an education program would have on the attitudes of hypertensive African-American men and women regarding their adherence to a prescribed medical regimen.

### **Rationale**

Hypertensive clients need to be knowledgeable about their disease in order to recognize long-term effects and to encourage the assumption of early self-care responsibility (Nemeck, 1989). Assisting clients to achieve and maintain active participation in the management of their disease presents a considerable challenge to health care providers (Given, et al., 1984). Health care providers must learn how personality characteristics, psychosocial variables, attitudes, and beliefs influence responses to interventions.

Several behavioral interventions have been employed as a means to improving the clients' participation in their care (Given, et al., 1984). For example, studies have shown education to be an effective means of increasing adherence to prescribed medical regimens among hypertensive clients (Levine, et al., 1979; Morisky, Bowler, & Finlay, 1982). However, few empirical studies have focused specifically on African-American hypertensive clients in regards to their attitudes, health beliefs, and adherence behaviors (Francis, 1991; Shea et al., 1992; Strong, 1988). Additionally, many research studies conducted on health education with hypertensive clients have used blood pressure control and knowledge of medications as outcome measures (Levine, et al., 1979; Powers & Wooldridge, 1982; Tanner & Noury, 1981). Few studies have used client attitudes as an outcome measure and a predictor of behavioral change.



### **Significance**

The direct costs of hypertension care is estimated between eight and ten billion dollars per year, with nearly half the costs in outpatient care (Soghikian, et al., 1992). Studies have shown that with improved adherence to treatment, overall costs of hypertension care can be significantly decreased in outpatient care cost, pharmacological treatment, and laboratory fees (Dickson, Robb, Hersman, Ryan, & Dahl, 1983; Soghikian, et al., 1992). Improved control of hypertension, as demonstrated in the literature, has contributed to reductions in incidence rates for stroke and ischemic heart disease ("Inferences From Secular Trend Analysis," 1992; Jacobs, McGovern, & Blackburn, 1992; Shea, et al., 1992). Therefore, for those with hypertension, continued adherence to a prescribed regimen significantly influences their quality of life.

Health education programs aimed at increasing awareness and knowledge of hypertension can contribute to greater adherence to medical regimens, lower the incidence of cardiovascular complications, and improve long-term management (Dickson, et al., 1983; Levine, et al., 1979). Additionally, knowledge gained through research on attitudes and health beliefs that influence persons to choose preventive health behaviors can be used to develop interventions that are more effective in improving health and preventing illness (Nemcek, 1990).

### **Theoretical Framework**

The theory of reasoned action (TRA) was introduced by Ajzen and Fishbein in 1967. Since that time, the theory has been further developed, refined, and tested. According to Ajzen and Fishbein (1980), the framework is referred to as a theory of reasoned action because people consider their actions before choosing to engage or not to engage in a given behavior. In other words, behavior is purposeful and not the result of random action.

### **Assumptions**

Ajzen and Fishbein (1980) make three basic assumptions about human behavior relevant to this theory. First, human beings make systematic use of information available to them. Human behavior is quite rationale, and is not controlled by unconscious motives or overpowering desires. Second, most actions of social relevance are under volitional control. Third, a person's intention to perform (or not perform) a behavior is the immediate determinant of the action. Based on this premise, barring unforeseen events, a person will usually act in accordance with his or her intentions.

### **Concepts**

According to the theory of reasoned action, a person's intention is a function of two basic determinants, one personal in nature and the other social in nature (Ajzen & Fishbein, 1980). The first or personal determinant, termed attitude toward the behavior, is the individual's positive or negative perceptions about the consequences of performing the behavior. The second or social determinant of intention is the person's perception of what society (family, friends, significant others) places on an individual to perform certain behaviors.

Concepts central to understanding the personal or attitudinal determinant of the theory of reasoned action are behavior, attitudes, and beliefs (Ajzen & Fishbein, 1980). Behavior involves performing a single action or sets of actions, and is not to be confused with outcomes. Outcomes are a result of behavior and can be influenced by factors other than behavior. For example, loss of weight may be due to physiological factors such as changes in metabolic rate rather than due to any particular behavior or action performed by the individual.

According to Ajzen and Fishbein (1980, p. 54), "an attitude toward any concept is simply a person's general feeling of favorableness or unfavorableness for that concept." In other words, an attitude toward a behavior is simply a person's judgement that performing the behavior is good or bad. The more favorable a person's attitude is toward a behavior, the greater the intentions and

likelihood that they will perform that behavior. The converse is also true. The more unfavorable a person's attitude is toward a behavior the less likely the intentions will be to perform the behavior (Ajzen & Fishbein, 1980).

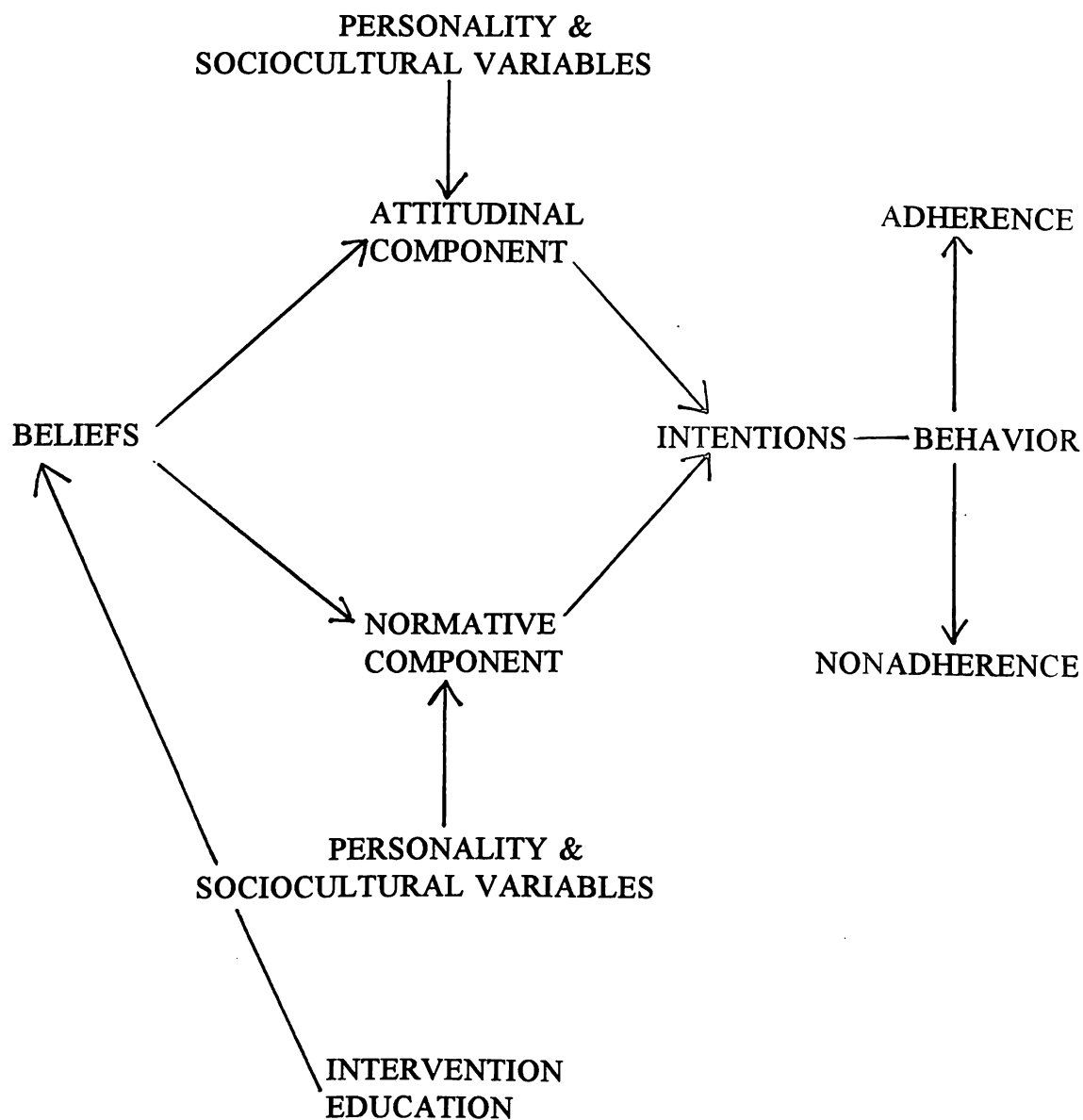
According to the theory of reasoned action, attitudes are a function of beliefs, as beliefs reflect a person's past experiences and exposures to different kinds of information (Ajzen & Fishbein, 1980). Therefore, beliefs are viewed as underlying a person's attitudes and ultimately determine intentions and behaviors. Unlike other investigators who attempt to assess beliefs as a part of attitude, beliefs are treated as a separate concept that is related to attitudes. For example, a person may hold a large number of beliefs about any given object, action, or event. However, there are only a relatively small number of beliefs, termed salient beliefs, that are the immediate determinants of the person's attitudes. These salient beliefs are subject to change, as they may be strengthened or weakened or replaced by new beliefs. In other words, beliefs are not the determinant of behaviors, but attitudes are.

The second or normative determinant of the theory of reasoned action deals with the influence of the social environment on intentions and behaviors. This central concept refers to the person's subjective norm. "Subjective norm refers to a specific behavioral prescription attributed to a generalized social agent" (Ajzen & Fishbein, 1980, p. 57). One's subjective norm is the personal desire to perform or not perform a specific behavior based on the perception of

what important others think one should or should not do. Subjective norms, like attitudes, are a function of beliefs but of a different kind. If a person believes important others think they should perform a behavior, the individual will perceive social pressure to do so. "People are viewed as intending to perform those behaviors they believe important others think they should perform" (Ajzen & Fishbein, 1980, p. 57).

### **Conceptual Elements and Behavioral Change**

In linking conceptual elements of this theory to behavioral change, one must be able to identify intentions that are related to the desired change in behavior: "Beliefs influence attitudes and subjective norms; these two components influence intentions; and intentions influence behaviors" (Ajzen & Fishbein, 1980, p. 80). Behavioral change is ultimately the result of changing attitudes. This implies that in order to influence behavior, one must expose people to information which will produce changes in their beliefs. One must also recognize that personality and other sociocultural variables can affect behavior through their influence on the attitudinal and normative components of the theory (Ajzen & Fishbein, 1980) (see Figure 1).



**Figure 1.** Model Of Fishbein's Theory of Reasoned Action (Ajzen & Fishbein, 1980).

The first step toward producing behavioral change is the identification of a set of primary beliefs concerning a given situation (Ajzen & Fishbein, 1980). For example, the kinds of salient beliefs individuals hold about the consequences of smoking could affect attitudes about intentions to smoke and, ultimately, to actual smoking behavior. Thus, an educational program aimed at the hazards of smoking could influence the kinds of salient beliefs individuals hold about the consequences of smoking. According to Ajzen and Fishbein (1980, p. 83), "even if education does not affect the beliefs that are salient for an individual, it might influence the strength with which one or more beliefs are held." Therefore, in time, individuals can learn that certain behaviors are more effective in achieving outcomes and begin to formulate new beliefs.

An important element of adhering to a medical regimen is the ongoing maintenance of newly acquired behaviors (Mann, 1989). For those with hypertension, the maintenance of newly-acquired behaviors are critical for the management of the disease and often must be maintained indefinitely. According to Ajzen and Fishbein (1980), the effective use of educational strategies and principles should influence beliefs and attitudes, thereby, increasing the probability that an individual will alter their salient beliefs to maintain the newly acquired behaviors.

Additionally, Ajzen and Fishbein (1980) contend that external variables such as age, socioeconomic status, and education can influence intentions and

behaviors indirectly by their effects on behavioral beliefs, outcome evaluations, normative beliefs, and motivations to comply. Therefore, identifying sociodemographic characteristics are important considerations to developing interventions that will assist in modifying client behavior relative to the management of their disease (Given, et al., 1984).

### **Research Question**

Using Fishbein's Model of Reasoned Action to explain the influence of beliefs and attitudes on behavioral change, the following research question was addressed: What is the impact of an educational program on the attitudes of hypertensive African-American clients regarding their adherence to a prescribed medical regimen?



## **CHAPTER II**

### **LITERATURE REVIEW**

In this chapter the following areas are addressed: (a) utilization of Fishbein's Model of Reasoned Action, (b) concept of adherence with prescribed medical regimens, (c) factors influencing adherence among hypertensive clients, and (d) educational strategies to improve patient adherence with antihypertensive therapy.

#### **Fishbein's Model of Reasoned Action**

The theory of reasoned action has been proven useful in predicting a range of attitudes and health behaviors. This theoretical framework has been used extensively in examining adherence behaviors with therapeutic medical regimens among cardiac patients (Miller, Wikoff, & Hiatt, 1992; Miller, McMahon, Ringel, Siniscalchi, & Welsh, 1989; Miller, Wikoff, McMahon, Garrett, & Ringel, 1988; Miller, Wikoff, McMahon, Garrett, & Ringel, 1985; Miller, Johnson, Garrett, Wikoff, & McMahon, 1982).

In a study using 112 subjects recovering from a first time myocardial infarction (MI), attitudes, perceived beliefs of others, and intentions toward medical regimen adherence during hospitalization and posthospitalization were examined (Miller, et al., 1985). Multiple regression analysis indicated that attitudes and perceived beliefs of others were strong indicators of intentions to

adhere to the medical regimen during hospitalization. Six to nine months posthospitalization, attitudes and perceived beliefs of others were strong indicators of actual regimen adherence. The findings from this study indicated that rehabilitation programs for the MI patient should be individualized and should contain information regarding the client's attitudes, intentions, and perceived beliefs of others toward the medical regimen during hospitalization and posthospitalization.

The relationship of attitudes and perceived beliefs of others to regimen compliance was further investigated in 81 patients one year after experiencing a myocardial infarction (Miller, et al., 1989). At one year, attitudes were predictive of compliance for all regimen prescriptions (diet, smoking, activity, stress, and medications), and perceived beliefs of others was predictive of diet, activity, and stress prescription.

Finally, the theory of reasoned action was further evaluated for its utility related to regimen compliance behaviors in 56 newly diagnosed hypertensive clients (Miller, et al., 1992). The investigators hypothesized that attitudes, motivation to comply, and perceived beliefs of others would directly affect intentions and indirectly affect compliance behavior. This was true for hypertensive clients for the prescriptions of diet, smoking, activity, and stress, but not for medications. Fishbein's model did not support intentions as an immediate predictor of behavior for taking medications. However, attitude and

motivation to comply were strong predictors of medication compliance.

### **Adherence and Prescribed Medical Regimens**

Adherence to prescribed medical regimens among hypertensive clients is a concern that has been addressed extensively in the literature (Branche, et al., 1991; Foster, & Kousch, 1981; Hershey, et al., 1980; Powers & Wooldridge, 1982; Reichgott & Simons-Morton, 1983; Richardson, Simons-Morton, & Annegers, 1993). Compliance or adherence to a prescribed medical regimen can be defined as "the extent to which a person's behavior (in terms of taking medications, following diets, or executing life-style changes) coincides with medical advice" (Reichgott & Simons-Morton, 1983, p. 22). Nonadherence or noncompliance refers to "a failure to follow a prescribed regimen" (Foster & Kousch, 1981, p. 33).

Nonadherence with prescribed medical regimens remains a central obstacle to the management of hypertension, and despite research efforts over the past decade, the predictors of nonadherence remain unclear (Richardson, et al., 1993). For example, clients may not follow their prescribed regimen for a number of reasons such as an intolerance to side effects from drug therapy, inability to pay for medications or other health care costs, lack of knowledge about the disease process, and/or negative attitudes or beliefs about the efficacy of treatment.

As Ajzen and Fishbein (1980) suggest, behavior is not the result of

random actions, but rather a systematic rational process. "We can gain understanding of a behavior by tracing its determinants back to the underlying beliefs, and we can influence the behavior by changing a sufficient number of these beliefs" (Ajzen & Fishbein, 1980, p. 91). Therefore, the decision to not adhere to a medical regimen is the result of a conscious planned action. Health care providers must ascertain the reason(s) why an individual is not following a regimen and begin a plan of action based on that individual's beliefs.

### **Determinants of Compliance Among Hypertensive Clients**

There are a multitude of studies directed at understanding compliance behaviors among hypertensive clients (Andreoli, 1981; Becker & Maiman, 1975; Hershey, et al., 1980; Richardson, et al., 1993; Shea, et al., 1992). Although the findings from these studies yield conflicting results, many researchers agree that adherence is especially poor in low-income populations. Inner-city patients are increasingly black and hispanic, and these patients are more likely to be uninsured or underinsured, to have low educational levels, to be less likely to seek preventive health care, and to be less capable of following a prescribed regimen than the populace as a whole (Francis, 1991).

Sociocultural variables on the management of hypertension in blacks can be analyzed by examining the interaction of the environment, the client's health beliefs, and the pattern of family and social support (Strong, 1988).

Environmental factors such as income and educational levels can affect compliance with therapy and control of hypertension such that lower income levels limit the patient's ability to pay for medications and seek care (Strong, 1988). These behaviors ultimately decrease the patient's compliance with the prescribed pharmacologic therapy. Low literacy skills and low levels of education also contribute to difficulty understanding the disease process and treatment modalities. In the Edgecombe County High Blood Pressure Control five-year project, researchers found that out of the 539 hypertensives studied, in general, black hypertensive patients faced more barriers to care than their white counterparts (James, et al., 1984).

Other sociocultural variables that can influence the management of hypertension among African-Americans are health beliefs plus family and social support systems (Strong, 1988). Results of The Edgecombe County High Blood Pressure Control Program further noted that black males have a lower confidence in the benefits of antihypertensive medications than white males. Additionally, black males are more likely to hold negative beliefs about the efficacy of treatment as long as they feel healthy (James, et al., 1984).

Several studies examining health beliefs of compliant and noncompliant hypertensive patients have found no significant differences in health beliefs between the two groups (Andreoli, 1981; Cronin, 1986); however, difficulty adjusting to the disease did correlate with uncontrolled hypertension

(Devon & Powers, 1984). Other studies examining health beliefs and compliance with taking antihypertensive medications found that compliance was correlated with perceived severity of hypertension and concern about other health matters (Bartucci, Perez, Pugsley, & Lombardo, 1987; Hershey, & Reichgott, 1980; Nelson, Stason, Neutra, Solomon, & McArdle, 1978). Similarly, Given, Given and Simoni (1978) found that both knowledge and perceptions of benefits from medications were significantly correlated with patient compliance.

Lack of social or family support has also been cited as a stressor that can contribute to noncompliance among African-American hypertensive clients (Smith, 1989). In a study conducted by researchers Devon and Powers (1984) on health beliefs and compliance, of 30 hypertensive clients, uncontrolled hypertensives experienced more domestic and extended family relationship problems as compared to controlled hypertensives. In a qualitative research study conducted with 54 black male college students concerning their beliefs about hypertension, both male and female students agreed that relatives and close friends had more influence on men's health behavior than did professionals (Ludescher, et al., 1993).

### **Educational Intervention Strategies**

Several educational strategies have been employed with hypertensive clients as a method of increasing adherence to their prescribed medical regimens. Among these strategies are structured teaching programs, individualized counseling, small group sessions, and family support (Bowler & Morisky, 1983; Given, et al., 1984; Levine, et al., 1979; Morisky, et al., 1982; Power & Wooldridge, 1982; Tanner & Noury, 1981).

In two different studies that examined the effect of structured teaching programs with hypertensive clients, significant differences were noted in participant's knowledge of medications and knowledge of overall health matters concerning their blood pressure control. However, in the same groups, no significant differences were found in diastolic blood pressure readings (Power & Wooldridge, 1982; Tanner & Noury, 1981).

Studies using multiple strategies for changing behaviors appear to be more successful than those utilizing single-strategy interventions (Given, et al., 1984). In a study where clients were provided with information on hypertension and problem-solving techniques, the intervention was successful in lowering diastolic blood pressure and altering beliefs about medications. Similarly, Levine, et al., (1979) found in a study of 400 clients (91% black), that when three educational interventions for the control of essential hypertension were employed (individual counseling session, home

visit, and small group sessions), there were favorable effects on blood pressure control, improved appointment keeping, and increased compliance with medication. It was interesting to note that the proportion of patients with blood pressures under control in the group assigned three interventions increased by 28%, while the blood pressure of the control group receiving standard therapy with no education remained unchanged.

Utilizing small group strategies for improving compliance behavior and blood pressure control has also been shown to be effective among hypertensive clients (Bowler & Morisky, 1983). A small group structured approach to improving compliance behavior and blood pressure control was used among an inner-city population group of 200 hypertensive clients. Six months following the intervention, 55% of the experimental group had their blood pressure under adequate control compared with 47% of the control group. Additionally, blood pressure control was positively correlated with the number of group sessions attended. Further analysis of two-year data with the same group indicated that the compliance success was not a function of the number of client contacts, but rather was a function of the content of the small group sessions, support outside the system, and support by the medical care system.

Finally, family support has been found to be an effective intervention in assisting hypertensive clients with medical regimen compliance when used in conjunction with other methods (Morisky, et al., 1982). In a study conducted



on the effects of family support intervention (through home visit) and small group sessions with 200 inner-city black hypertensives, there was a significant effect on the outcome variable of blood pressure control. The combined approach showed small differences on the attitude and behavioral measures, but blood pressure was controlled in 62% of those in the intervention groups compared to 46% in the nonintervention group.

In summary, the phenomena of compliance has been documented extensively; however, the determinants of compliance or adherence still appear to be somewhat misunderstood, especially among African-American hypertensive clients. There are a multitude of definitions, characteristics, and dimensions researchers use to measure, predict, and explain the concept of compliance; however, little is documented about the attitudes and health beliefs that influence compliance among all population groups and minority populations in particular.

Educational behavioral intervention strategies such as structured teaching, small group sessions, individualized counseling, and family support have proven to be somewhat useful in assisting clients to participate in the care and control of their blood pressure (Bowler & Morisky, 1983; Given, et al., 1984; Levine, et al., 1979; Morisky, et al., 1982; Power & Wooldridge, 1982; Tanner & Noury, 1981). Among the studies reviewed, researchers agree using

a combination of educational intervention strategies are most likely to achieve the greatest improvement in long-term adherence behaviors among hypertensive clients.

## **CHAPTER III**

### **METHODOLOGY**

In order to determine the impact of education on the attitudes of African-American hypertensive clients, a quasi-experimental study was conducted. The methodology chapter provides a detailed description of the study and is organized according to the following sections: operational definitions, design, setting, and procedures. The study was designed to answer the research question: What is the impact of an educational program on the attitudes of hypertensive African-American clients regarding their adherence to a prescribed medical regimen?

#### **Operational Definitions**

An operational definition describes the variable to be measured or manipulated (Burns & Grove, 1993). Operational definitions are provided for the following variables and concepts: attitude, educational program, structured teaching, adherence, medical regimen, and African-American.

### **Definition of Terms**

#### **Attitude**

Attitude is defined as a favorable or unfavorable feeling toward a person or concept (Ajzen & Fishbein, 1980). The Miller Attitude Scale was used to measure favorable and unfavorable attitudes toward performing regimen prescriptions for medication, diet, activity, stress, and smoking (Miller, Wikoff, McMahon, Garrett, and Johnson, 1982).

#### **Educational Program**

An educational program is defined as a process of imparting knowledge by way of a plan or schedule (Stein, 1975). The content of the educational program included information regarding modifiable and nonmodifiable risk factors associated with hypertension as well as recommended pharmacological and nonpharmacological treatment for hypertensive-related conditions. The information was imparted using a structured teaching, small group, lecture-discussion format.

#### **Structured Teaching**

"Structured teaching is defined as instruction that is planned in advance to a definite teaching guide or outline, and scheduled for a specific time and place for one or several learners" (cited in Tanner & Noury, 1981, p. 102).

The instruction took place over two class sessions covering two primary

topics per session (see Appendix F for detailed lesson plan).

### **Adherence**

Adherence is defined as the act of following or sticking to a plan (Stein, 1975). "The extent to which a person's behavior (in terms of taking medications, following diets, or executing life-style changes) coincides with medical advice" (Reichgott & Simons-Morton, 1983, p. 22). In the present study, adherence was defined as the client's self-report of prescriptions for medication, diet, activity, stress, and/or smoking.

### **Medical Regimen**

Medical regimen is defined as actions prescribed by a practitioner. Operationally, medical regimen is defined as instructions for medication, diet, activity, stress response, and smoking habits (Miller, Wikoff, et al., 1982).

### **African-American**

African-American is defined as an American of African origin or descent (Stein, 1975). Operationally, African-American is defined as an adult aged 18 years and older, who identifies himself or herself as an American of African ancestry or culture.

### **Design**

A descriptive quasi-experimental design was used to answer the research question. The nursing intervention or the independent variable in this study was the education program involving African-American hypertensive clients. The dependent variable was attitudes of participants regarding their adherence to a prescribed medical regimen. A one-group, pretest-posttest design was used to measure attitudes both before and after participants received educational classes on blood pressure control.

### **Setting**

The study was conducted at a community church in northeast San Antonio, Texas. The church is located in an urban area comprised of mostly low income black and hispanic residents who utilize a local community health center for primary care. The health center is a federally funded community based clinic which is accessible, affordable, and available to the residents in this area. The clinic services approximately 200 clients per month with hypertensive-related conditions (e.g., heart disease, hypertension, diabetes, etc.). Of that number approximately 50% are African-American clients over the age of 18. The pretesting, posttesting, and intervention protocol took place in a classroom located in the basement of the church.

### **Procedures**

The procedure section contains a step-by-step plan of action for the study including a detailed description of the subjects, how the study was conducted, and how the data was analyzed. This section is organized according to instrumentation, sample selection, protection of human subjects, data collection, and procedure for data analysis.

### **Instrumentation**

According to Ajzen and Fishbein (1980), the attitudinal component of the theory of reasoned action refers to favorableness or unfavorableness toward the behavior in question. The Miller Attitude Scale measures favorable or unfavorable attitudes toward performing regimen prescriptions. The instrument is a nine-item, seven-point semantic differential scale. Permission to use the instrument was granted by the developer and can be found in Appendix A.

Upon development of the instrument, 27 patients (80% male, 20% female, all caucasian sample) with myocardial infarctions were queried about the advantages and disadvantages of following their prescribed medical regimen. For example, a patient might respond to the disadvantages of staying on a diet by saying, "it is hard for me," this response was represented by the bipolar adjectives "difficult-easy." The response, "it's good for me," was represented by the adjective pair "good-bad" (Miller, Wikoff, et al., 1982,

p. 133). Certain readily identifiable adjectives were matched with the descriptive phrases about the actions of the medical regimen. After ambiguous and unreliable items were removed, nine bipolar adjectives were used to describe responses about the medical regimen (see Appendix B for complete Miller Attitude Scale).

### **Instrument Scoring**

The same nine sets of bipolar adjectives were used for each of five subscales which include taking medication, following a diet, performing activity, modifying response to stress, and stopping smoking. The bipolar adjectives include items such as difficult-easy, successful-unsuccessful, and healthy-unhealthy. A 7-point continuum between paired adjectives was used to elicit the most accurate responses. The subject selects one point on the scale that best describes his or her view of the concept being measured. Scale items are scored from unfavorable (1) to favorable (7). Two pairs of irrelevant adjectives (alert-passive and sharp-blunt) were included in the scale only to check reliability of subject response. When the two pairs of irrelevant adjectives are omitted, the total possible score for each of the five subscales is 63. The subscales and the total scale were tabulated by the investigator.



### **Psychometric Properties of the Miller Attitude Scale**

Internal consistency reliability has been reported for the Miller Attitude Scale in studies involving cardiac and hypertensive patients (Miller, Wikoff, et al., 1992; Miller, et al., 1988; Miller, et al., 1989). Cronbach's alpha coefficients for the five subscales of the Miller Attitude Scale ranged from .83 to .87, well within the established levels of reliability standards (Burns & Grove, 1993).

Content validity for the Miller Attitude Scale was established by experts in the disciplines of nursing, medicine, and social psychology. The content experts evaluated the congruency between the bipolar adjectives and the subjects' descriptions of the advantages and disadvantages of following the prescribed medical regimen (Miller, Wikoff, et al., 1982).

The data for the Miller Attitude Scale was also submitted to factor analysis using two different approaches for the purpose of establishing construct validity. First all items for all behaviors were factored together and second, separate behavior scales (40 items--eight adjective pairs for each of five behaviors) were factored individually. These approaches resulted in eight factors accounting for 55.23% of the variance. Each of the five behaviors of the medical regimen significantly defined a factor which provided support for treating each behavior as a separate subscale (Miller, Wikoff, et al., 1982).

Finally, predictive validity has been reported for the Miller Attitude Scale. The degree of adherence behaviors for all actions of the medical regimen were measured using a Health Behavior Scale at the six-month follow up of patients who had experienced a myocardial infarction (Miller, Johnson, et al., 1982). Attitude and adherence behavior scores were correlated using Spearman's rank correlations. Attitudes and behavior were significantly correlated for the subscales of diet ( $r = .31$ ,  $p < .05$ ), activity ( $r = .46$ ,  $p < .01$ ), and smoking ( $r = .62$ ,  $p < .001$ ), but not for stress or medication.

The reporting of psychometric properties for the Miller Attitude Scale indicates that it is a valid and reliable tool for eliciting factors that affect adherence behaviors in cardiac patients and hypertensive patients (Miller, et al., 1992; Miller, Johnson, et al., 1982). However, because the Miller Attitude Scale has only been used once with a hypertensive population, internal consistency reliability was also conducted with this study's defined population.

### **Sample Selection**

The sample included African-American hypertensive clients who resided in northeast San Antonio, Texas; who utilized Ella Austin Health Center for primary care; who consented to participate in the study; and who met the criteria for inclusion in the study. A total of 30 subjects were recruited and invited to participate in the study as a result of referrals from the health educator and physicians at Ella Austin Health Center. The criteria for inclusion in the study were as follows:

1. Any newly diagnosed hypertensive client (all clients diagnosed with hypertension over the past year will be considered newly diagnosed and eligible to participate in the study);
2. Any client despite medical interventions (eg. medications), who as defined by physician parameters, has poorly controlled hypertension, and who the physician feels may benefit from the guidance, support, and group sharing of information;
3. Any patient who is borderline hypertensive, at risk of developing hypertensive-related complications, and who would benefit from receiving class room instruction, guidance, and support; and
4. Any hypertensive client who reads and speaks English and is able to give informed consent.

### **Protection of Human Subjects**

The researcher obtained approval for conducting the study from the Institutional Review Boards at Incarnate Word College and Ella Austin Health Center (see Appendix C & D). Prior to the collection of data, information regarding the policy for use of the health facility and the policy for reporting the findings were also obtained.

Subjects who participated in the study were informed of their rights to self-determination, privacy, confidentiality, and fair treatment. Informed consent was obtained from the subjects prior to their participation in the study (see Appendix E). The subjects were informed of the following information: (a) no information would be routinely shared without the individual's prior knowledge and expressed consent, (b) their identity would remain anonymous outside of the classroom sessions, (c) their participation in the study would have no effect on the care they receive at the health center, and (d) they had the right to withdraw from the study at any time. In addition, anonymity of subjects and confidentiality of data collected during the study was protected by giving each subject a code number. The master list of the subject's names and their code numbers were known only to the researcher.

Finally, the researcher fully explained to the subject's their involvement in the study and the researcher's involvement in the study. The subject's participation in the study which involved no physical or emotional risks,

included attending two educational classes on blood pressure control and completing a pretest and a posttest questionnaire. The researcher's role was to participate in teaching the educational sessions, collect the data, and analyze the data.

### **Data Collection**

Data was collected on the dependent variable, attitudes of African-American hypertensive clients about a prescribed medical regimen (instructions for diet, activity, medications, smoking habits, and stress response), before and after the implementation of an educational program. Additionally, data was collected on sociocultural variables that might affect their attitudes toward adherence behaviors such as age, sex, family history of hypertension, education level, known duration of hypertensive condition, and participation in hypertension education within the past year.

A two-part questionnaire was used to measure attitudes and pertinent demographic data. Part one of the questionnaire contained questions about demographic data and the second part contained the Miller Attitude Scale. The subject answered part one by filling in the appropriate data. In part two, the subject selected one point on the scale that best described his or her view of the medical regimen. The pretest questionnaires were distributed at the beginning of the first session and the posttest questionnaires were distributed

upon completion of the second classroom session. It took approximately 10 minutes to complete both sections of the questionnaire.

### **Intervention Protocol**

The educational program consisted of 2-two hour sessions covering two topics per session. The study was conducted on November 16 and 23, 1994, and January 4 and 11, 1995. The methods of classroom instruction included lecture, discussion, audiovisual aids, and behavior-modification.

The lecture-discussion format was used to impart information, influence opinions, stimulate thought, and develop critical thinking (Dignan & Carr, 1981). Although the participants were passive learners with this method, there was opportunity for dialogue between instructor and client. This format was used primarily to introduce each topic and provide a summary to each class. Videocassette tapes were also used in conjunction with the lecture-discussion format to provide additional information and to maintain a level of interest using different medias.

Behavior-modification, which is based on the principle of stimulus-response, was used to encouraged participation and interaction. For example, incentives were offered to encourage program attendance such as refreshments during each session and gift packs for successful completion of both classes.

Informational topics and content included in the lesson plans were derived from the following sources: (a) First, from the literature (Hildreth, 1992; Marnalse, Bohanek, Kopp, & Roche, November, 1984; Marnalse, Bohanek, Kopp, & Roche, December, 1984; National High Blood Pressure Education Program, 1988); (b) second, from the clinic manager and the health educator at Ella Austin Health Center; (c) third, from a cardiologist affiliated with the American Heart Association (W. Wright, personal communication, April 15, 1994); and (d) fourth, from an informal survey of black hypertensive clients who utilized the health center.

The educator at Ella Austin Health Center assisted the investigator with data collection by administering the pretest and posttest questionnaires and co-teaching the educational sessions. Prior to the start of the study, the health educator was fully informed about the intervention protocol and instructions for completing the questionnaires. A general outline of the program content is provided below and a detailed lesson plan is provided in Appendix F.

## **Overview of Educational Sessions**

### **Session I**

- A. Introduction and background information on:
  - 1. overview of the educational sessions
  - 2. hypertension/statistics
  - 3. pretest on attitudes
- B. Videotape on an overview of hypertension, complications, and changes in lifestyle
- C. Discussion of Hypertension
  - 1. definition of hypertension, ranges, and types
  - 2. risk factors
  - 3. treatment
  - 4. consequences of nontreatment

### **Session II**

- A. Dietary Considerations in Controlling Hypertension
  - 1. sodium reduction
  - 2. potassium
  - 3. cholesterol and saturated fat
  - 4. dietary planning
- B. Weight Control
- C. Questions and Answers



### **Session III**

- A. Videotape on Lifestyle modification
- B. Discussion on:
  - 1. Smoking and implications for hypertensives
  - 2. alcohol and implications for hypertensives
  - 3. stress and implications for hypertensives

### **Session IV**

- A. Medical Interventions
- B. Purpose of Drug Therapy
  - 1. importance of drug therapy
  - 2. general categories
  - 3. common side effects, food and drug interactions
- C. Discussion on the Importance of Long-Term Medical Management
- D. Demonstration and Participation
  - 1. instructions on how to self-monitor blood pressure
  - 2. sharing problems/ideas on medication compliance
- E. Posttest on attitudes

### **Data Analysis Procedures**

Only those individuals who completed both class sessions and who completed the pretest and posttest questionnaires were included in the final data analysis. A computer statistical software package entitled Statistical Packages for the Social Sciences (SPSS) was used to perform the data analysis (Norusis, 1991).

The data analysis consisted of group demographic analysis, analysis relative to the research question, and exploratory analysis to examine differences and associations within the sample. Demographic data analysis is important because studies have demonstrated a strong relationship between such factors as income, education level, parental history of hypertension, age, and duration of illness with the prevalence of hypertension and its cardiovascular sequelae (Francis, 1991; Richardon, et al., 1993; Thomas, et al., 1984).

Demographic data including age, sex, family history of hypertension, duration of known hypertensive condition, education level, and previous hypertension education was treated as nominal or categorical data. A frequency distribution was applied to the demographic characteristics and descriptive statistics were used to highlight specific findings. The chi-square test was also used to assess whether or not there were significant differences in the proportion of subjects by demographic variables.

To answer the research question, a paired t-test was used to analyze the difference between pretest and posttest scores of the Miller Attitude Scale. The scores used in the pretest and posttest analysis were obtained from the same subjects under different conditions (e.g., pre instruction and post instruction) and the data obtained from the Miller Attitude Scale was interval-level data.

Exploratory data analysis was performed to determine if demographics had an influence on pre-attitude scores. Analysis of variance testing was conducted to examine the effect of demographic variables on pre-attitude test scores. A one-tailed test of significance at the  $p = .05$  level was used for all data analysis in the study.

## **CHAPTER IV**

### **DATA ANALYSIS**

The data analysis chapter provides a detailed analysis of the data collected using descriptive and inferential statistics. This chapter is organized according to the following sections: a description of the sample group using frequency distributions, a comparison of the sample group in terms of characteristics using nonparametric statistics, and a determination of differences between group means using parametric statistics.

#### **Description of the Sample**

A total of 30 subjects met the criteria for inclusion in the study. Through maturation, 9 of the 30 subjects did not complete both educational sessions and/or the posttest questionnaire. Therefore, final data analysis consisted of 21 subjects, 13 (61.9%) females and 8 (38.1%) males. Most of the participants were between ages 26 and 45 (47.6%). Somewhat fewer, but still a significant portion, were over the age of 65 (33.3%). A sizeable majority (61.9%) of subjects had at least the equivalence of a high school diploma and 38.1% had one or more years of college education. Maternal history of hypertension (47%) was attributable to the majority of those who reported a family history of the condition (61.9%). Most of the subjects had been aware of their hypertensive condition greater than five years (66.7%) and

had received some form of education (52.4%) within the past year. Finally, alcohol use and cigarette smoking was reported by fewer than half of the participants (38.1%). Table 1 presents ranges for demographic data including number of subjects, frequency and percentages.

**Table 1: Demographic Characteristics of Age, Gender, Education Level, Family History of Hypertension (HTN), Use of Alcohol, Years Aware of HTN, and Prior HTN Education**

Category		Frequency	Percent
Age	26-45	10	47.6
	45-65	4	19.1
	over 65	7	33.3
Gender	Male	8	38.1
	Female	13	61.9
Education Level			
	1 > years of college	8	38.1
	high school graduate	5	23.8
	10-12 years of school	7	33.8
	missing data	1	4.8
Family History			
	Mother	10	47.6
	Father	1	4.8
	Grandparents	7	9.5
Alcohol Use			
	yes	8	38.1
	no	12	57.1
	missing data	1	4.8
Years Aware of HTN			
	1-2	5	24.4
	3-4	1	4.8
	> 5	14	66.7
Prior Education on HTN			
	< 1 year	11	52.4
	> 1 year	5	23.8
	never	5	23.8

In order to examine for differences in proportion of subjects by demographic variables of alcohol use, duration of known hypertension, gender, family history, and education level, chi-square tests were performed. The results indicated that there were no significant differences in the proportion of subjects who used alcohol by their known duration of hypertension. Nor were there significant differences in family history of hypertension or education level by gender (see Table 2 for results of the chi-square tests).

**Table 2: Chi-Square To Examine For Differences In Proportion Of Subjects By Demographic Variables**

	$\chi^2$	df	p
Alcohol Use By Awareness of HTN	4.85	4	.303
Gender By Family History of HTN	1.71	2	.425
Gender By Education Level	1.63	2	.442

Internal consistency was evaluated on the five subscales of the Miller Attitude Scale with this study's population of African-American hypertensive clients using Cronbach's alpha coefficient. The alpha coefficients were as follows: medication (.87), diet (.76), activity (.84), stress (.76), and smoking (.95). The resultant coefficients indicated a medium to high reliability for all subscales of the Miller Attitude Scale with the population under study. In a recent study of compliance behavior of hypertensive patients, Miller, Wikoff, et al. (1992) reported comparable alpha reliabilities ranging from .83 to .87.

### **Major Findings**

The purpose of this study was to examine the impact of education on the attitudes of African-American hypertensive men and women regarding their adherence to taking medications, following a prescribed diet, engaging in activity, modifying response to stress, and quitting smoking. Therefore, in order to answer the research question, a one-tailed t-test for paired samples was used to analyze the difference between pretest and posttest mean scores of the Miller Attitude Scale.



### **Findings Relative to the Research Question**

#### **medication**

The mean score for the subscale medication on the pretest was 56.833 and the mean score for the posttest was 59.833. The t-test performed on the mean scores indicated a significant difference between pretest and posttest attitudes regarding medications ( $t = -278$ ,  $p = .013$ ).

#### **diet**

The mean score for the subscale diet on the pretest was 52.667 and the mean score for the posttest was 56.905. The t-test performed on the mean scores indicated a significant difference between pretest and posttest attitudes regarding diet ( $t = -319$ ,  $p = .005$ ).

#### **activity**

The mean score for the subscale activity on the pretest was 52.300 and the mean score for the posttest was 59.400. The t-test performed on the mean scores indicated a significant difference between pretest and posttest attitudes regarding activity ( $t = -3.41$ ,  $p = .003$ ).

**stress**

The mean score for the subscale stress on the pretest was 51.286 and the mean score for the posttest was 56.429. The t-test performed on the mean scores indicated a significant difference between pretest and posttest attitudes regarding stress ( $t = -3.40$ ,  $p = .003$ ).

**smoking**

The mean score for the subscale smoking on the pretest was 44.250 and the mean score for the posttest was 53.750. The t-test performed on the mean scores indicated no significant difference between pretest and posttest attitudes regarding smoking ( $t = -2.17$ ,  $p = .067$ ). The results of the paired t-test analysis for all five subscales are presented in Table 3.

**Table 3:** t Test For Pre and Post Scores On Attitudes Toward Adhering To A Prescribed Medical Regimen

Variable	N	M	SD	t	p
Pre medication	18	56.83	8.466	-.278	*.013
Post medication	18	59.833	5.193		
Pre diet	21	52.667	8.918	-.319	*.005
Post diet	21	56.905	7.120		
Pre activity	20	52.300	9.868	-3.41	*.003
Post activity	20	59.400	4.935		
Pre stress	21	51.286	8.979	-3.40	*.003
Post stress	21	56.429	6.585		
Pre smoking	8	44.250	19.418	-2.17	.067
Post smoking	8	53.750	9.996		

\* p < .05

### **Exploratory Data Analysis**

In order to examine the effect of demographic variables on pretest scores, four one-way analysis of variance's (ANOVA) were conducted. There were no significant differences in pretest scores attributable to age, gender, or education level. However, there was a statistically significant difference in pretest attitudes toward diet based on prior hypertension education, where  $F = 4.21$ ,  $df = 2/18$ , and  $p = .032$  (see Table 4 in Appendix G for ANOVA summary table).

The diet subscale mean score of the group who had received some form of education within the past year was 57.00. The mean score of the group who had received education, but not in the past year was 50.60. The group who had no prior hypertension education had a mean score of 45.20. Post hoc analysis using Scheffe's test indicated a statistically significant difference in mean scores between groups 1 and 3, the group who had received hypertension education within the past year and the group who had no prior education.

## **CHAPTER V**

### **SUMMARY**

The summary chapter provides a discussion of the overall findings of the study. This chapter is organized according to the following: summary of the major findings, overall meaning of the findings, limitations of the study, implications for nursing practice, and recommendations for further research.

#### **Discussion of Findings**

A review of the descriptive statistics revealed that the sample group was fairly diverse in relationship to demographic variables of age, gender and education level. However, nonparametric statistics indicated that there were no significant differences in proportion of subjects by demographic variables of alcohol use, awareness of hypertension, family history, and education level.

Results of the paired t-test on pre attitudes and post attitudes revealed that there were significant differences between mean scores for medication, diet, activity, and stress, but not for smoking. Further exploratory analysis of the data using parametric statistics indicated that the pre attitude scores were not significantly different based upon gender, education level, or age. However, pre attitudes about diet was significantly different in relation to prior education on hypertension.

### **Significance of Findings**

In this study, attitudes were more favorable toward taking medications, following a prescribed diet, engaging in activity, and modifying response to stress after participating in a hypertension education program. There was not a statistically significant change in attitudes toward quitting smoking. This finding may have been as a result of the relatively small number of smokers ( $N = 8$ ) in the sample group, thus not allowing for a significant difference in test scores. However, unfavorable attitudes toward smoking and difficulty in stopping smoking have also been noted in other studies (Miller, et al., 1988; Miller, et al., 1984; Miller, Johnson, et al., 1982). If attitudes are predictors of behavior as Ajzen and Fishbein (1980) suggest, this finding may explain difficulties in long-term adherence to quitting smoking.

It was also interesting to note that two-thirds of the sample group had been aware of their hypertensive condition greater than five years. This finding is consistent with other research studies where the majority of cases (85% to 98%) of uncontrolled hypertension have been previously diagnosed and treated (Shea, et al., 1992). Additionally, there is evidence that patients tend to vacillate with treatment over time and those who have been in treatment over five years are less likely to be compliant (Reichgott & Simons-Morton, 1983).

significant difference was noted in attitudes regarding diet in subjects who had received some form of hypertension education within the past year. This finding suggest that those who had been exposed to information about diet prior to pretesting may have held more positive beliefs and more favorable attitudes about following a prescribed diet than those who had not been exposed to the information.

### **Limitations of the Study**

Limitations of a study restrict the generalizability of the findings (Burns & Grove, 1993). The methodological limitations of this study included sample size and selection, setting, and research design. The study's sample was a small convenience sample comprised of individuals living in a lower socioeconomic urban community. Furthermore, a single health setting from one geographical location (southwest) was used for obtaining the sample group. Therefore, caution should be undertaken with regard to interpreting the study's results to African-American hypertensive clients in different settings, (e.g., hospitals, private clinics) from different geographical locations, and with different demographic variables (e.g., higher or lower educational attainment, higher or lower socioeconomic levels).

The uncontrolled threats to validity in this quasi-experimental design included the following in regard to posttest scores: The posttest scores might

have been altered by the maturation process, the administration of the pretest, and the length of time between teaching and administration of the posttest. First, differential subject mortality was of particular concern because some individuals did not return to complete both educational sessions and, therefore could not be used in the final data analysis. Second, subjects may have been exposed to information other than the class sessions in between the pretesting and the posttesting period. Third, the posttest scores might have been affected by the subjects remembering pretest responses. Finally, as a result of administering the posttest immediately after completion of the class sessions, posttest scores might have been artificially inflated.

### **Implications for Nursing**

The implications of this study are twofold. Firstly, it is important to understand how behavior is mediated by attitude in order to gain an understanding of the factors that encourage or discourage healthy behaviors (Given, et al., 1984). Nurses working with hypertensive patients must work on the factors that will increase their likelihood of adhering to therapy. Individualized assessments of attitudes should be performed in order to focus on content that may be of a particular concern for the patient such as difficulty in quitting smoking.

Secondly, as this study's results suggest, health education programs



aimed at increasing awareness and knowledge of hypertension may influence attitudes about intentions to follow a prescribed medical regimen and ultimately, to actual behavior. As evidenced by the number of subjects who had been aware of their hypertensive condition greater than five years, it is also important to provide periodic reeducation to continue favorable attitudes toward adhering to therapy. By planning effective programs and assisting hypertensive clients with their long-term health management, nurses and other health care providers can help lower the incidence of morbidity and mortality associated with uncontrolled high blood pressure.

#### **Recommendations for Further Research**

Based on the findings of this study, three recommendations are made for future research. Firstly, conducting a replication of this study with a larger random sample from multiple health care settings would increase the generalizability of findings. Secondly, a longitudinal study using a similar design would yield useful information regarding the impact of education on attitudes over time. Finally, conducting a study to examine the influence of attitudes on actual behavior would further assist health care providers in understanding the problem of nonadherence. Future studies would not only validate this study's findings, but would provide a way to begin to deal with the lack of awareness and early withdrawal from hypertension treatment programs among this population.

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## APPENDICES

# Briar Cliff College

Appendix A

64

July 26, 1994

Teresa Y. McPherson, BSN, RN  
10009 Coast Ridge  
Converse, TX 78109

Dear Teresa:

Enclosed are the Health Behavior Scale for Patients with Heart Conditions, Intention Scale and Miller Health Attitude Scale that you requested.

You have my permission to use these instruments with your research project. My only request is that you reference their use appropriately.

Sincerely,



Sr. Patricia Miller, Ph.D., R.N.  
Chairperson, Department of Nursing

SPM/mn  
encl

Subject Identification Number \_\_\_\_\_

Date \_\_\_\_\_

A. Age: (1) 18-25 (2) 26-35 (3) 36-45 (4) 46-55 (5) 56-65 (6) over 66

**B. Gender:** (1) Male (2) Female **C. Ethnicity:** (1) Black (2) Hispanic (3) White (4) Other

**D. Educational Level:** (1) One or more years of college (2) High school graduate (3) 10-12 years  
(4) 9-11 years (5) 8 years or less

**E. Family History of Hypertension: (1) Mother (2) Father (3) Sister (4) Brother (5) Grandparents**

F. How long have you been aware that you have high blood pressure:  
 (1) one year or less (2) 1-2 years (3) 3-4 years (4) 5 years or more

G. Do you drink alcohol: (1) yes (2) no If yes, what type: (1) Wine (2) Beer (3) liquor (gin, rum, vodka, brandy, etc.) and how often: (1) once or twice/week (2) everyday (3) once a week (4) weekends (5) other

H. Have you received any form of education pertaining to high blood pressure within the last:  
 (1) 6 months (2) 1 year (3) 2 years (4) 3 years (5) 4 years (6) 5 years (7) 5 years or more

## MILLER HEALTH ATTITUDE SCALE

The purpose of these scales is to measure the meaning of certain things to various people by having them choose between two descriptive words. You have been diagnosed by a physician as having high blood pressure and you are to follow a medical regimen that may include prescriptions for : diet, activity, smoking, medication and stress. In completing the scale, please make your judgement on the basis of what the concepts listed mean to you. On each page, you will find a different concept to be judged and beneath it a set of scales. Look at each pair of words and place an X in the space which best describes your feelings about the action of the medical regimen. If any action does not apply such as smoking, diet, activity, stress, or medication please skip that section.

**Example:**

## KEEPING DOCTORS APPOINTMENT

VERY   SOMEWHAT   SLIGHTLY   NEUTRAL   SLIGHTLY   SOMEWHAT   VERY

Foolish : : X : : Wise

Valuable : : : : : **X** : : : : : Worthless

er Patricia Miller, R.N., Ph.D.

Professor, Chairperson

pt. of Nursing

at Cliff College, Sioux City, IA

## TAKING MEDICATION

very    somewhat    slightly    neutral    slightly    somewhat    very

1. Successful : : : : : : : : Unsuccessful
2. Valuable : : : : : : : : Worthless
3. Harmful : : : : : : : : Helpful
4. Passive : : : : : : : : Alert
5. Difficult : : : : : : : : Easy
6. Good : : : : : : : : Bad
7. Healthy : : : : : : : : Unhealthy
8. Sharp : : : : : : : : Blunt
9. Unnecessary : : : : : : : : Essential
10. Aggravating : : : : : : : : Soothing
11. Fair : : : : : : : : Unfair

## FOLLOWING PRESCRIBED DIET

very    somewhat    slightly    neutral    slightly    somewhat    very

- |                 |   |   |   |   |   |   |   |                |
|-----------------|---|---|---|---|---|---|---|----------------|
| 1. Successful   | : | : | : | : | : | : | : | : Unsuccessful |
| 2. Valuable     | : | : | : | : | : | : | : | : Worthless    |
| 3. Harmful      | : | : | : | : | : | : | : | : Helpful      |
| 4. Passive      | : | : | : | : | : | : | : | : Alert        |
| 5. Difficult    | : | : | : | : | : | : | : | : Easy         |
| 6. Good         | : | : | : | : | : | : | : | : Bad          |
| 7. Healthy      | : | : | : | : | : | : | : | : Unhealthy    |
| 8. Sharp        | : | : | : | : | : | : | : | : Blunt        |
| 9. Unnecessary  | : | : | : | : | : | : | : | : Essential    |
| 10. Aggravating | : | : | : | : | : | : | : | : Soothing     |
| 11. Fair        | : | : | : | : | : | : | : | : Unfair       |

## PERFORMING ACTIVITY

very    somewhat    slightly    neutral    slightly    somewhat    very

1. Successful : : : : : : : : Unsuccessful
2. Valuable : : : : : : : : Worthless
3. Harmful : : : : : : : : Helpful
4. Passive : : : : : : : : Alert
5. Difficult : : : : : : : : Easy
6. Good : : : : : : : : Bad
7. Healthy : : : : : : : : Unhealthy
8. Sharp : : : : : : : : Blunt
9. Unnecessary : : : : : : : : Essential
10. Aggravating : : : : : : : : Soothing
11. Fair : : : : : : : : Unfair

## MODIFYING RESPONSE TO EXCITING OR STRESSFUL SITUATIONS

very    somewhat    slightly    neutral    slightly    somewhat    very

1. Successful : : : : : : : : Unsuccessful
2. Valuable : : : : : : : : Worthless
3. Harmful : : : : : : : : Helpful
4. Passive : : : : : : : : Alert
5. Difficult : : : : : : : : Easy
6. Good : : : : : : : : Bad
7. Healthy : : : : : : : : Unhealthy
8. Sharp : : : : : : : : Blunt
9. Unnecessary : : : : : : : : Essential
10. Aggravating : : : : : : : : Soothing
11. Fair : : : : : : : : Unfair




## QUITTING SMOKING

very    somewhat    slightly    neutral    slightly    somewhat    very

1. Successful : : : : : : : : Unsuccessful
2. Valuable : : : : : : : : Worthless
3. Harmful : : : : : : : : Helpful
4. Passive : : : : : : : : Alert
5. Difficult : : : : : : : : Easy
6. Good : : : : : : : : Bad
7. Healthy : : : : : : : : Unhealthy
8. Sharp : : : : : : : : Blunt
9. Unnecessary : : : : : : : : Essential
10. Aggravating : : : : : : : : Soothing
11. Fair : : : : : : : : Unfair

## MEMORANDUM

TO: Teresa McPherson, Dr. Sara Kolb

FROM: Dr. Bob Connelly, Chair of IRB 

RE: Research Proposal: The impact of a health education program on the attitudes of African-American hypertensive clients regarding adherence to a prescribed medical regimen

DATE: October 28, 1994

---

The Institutional Review Board of Incarnate Word College categorizes this proposal as EXEMPT.

INCARNATE WORD COLLEGE  
Institutional Review Board  
Research Questionnaire

I. Investigator: Teresa Y. McPherson

Colleagues: N/A

II. Division/Department: Nursing

III. Research Category:

- A. Exempt: X  
B. Expedited: \_\_\_\_\_  
C. Full Board: \_\_\_\_\_

IV. Purpose of Study: What impact will an educational program focusing on risk factors and treatment modalities of hypertension have on the attitudes of hypertensive African-American men and women regarding adherence to their prescribed medical regimens.

Number of Subjects: 30 Controls: none

Does this research involve any of the following:

	YES	NO
Inmates of penal institutions	_____	<u>X</u>
Institutionalized mentally retarded	_____	<u>X</u>
Institutionalized mentally disabled	_____	<u>X</u>
Committed patients	_____	<u>X</u>
Mentally retarded outpatient	_____	<u>X</u>
Mentally disabled outpatient	_____	<u>X</u>
Pregnant women	_____	<u>X</u>
Fetus in utero	_____	<u>X</u>
Viable fetus	_____	<u>X</u>
Nonviable fetus	_____	<u>X</u>
Dead fetus	_____	<u>X</u>
In vitro fertilization	_____	<u>X</u>
Minors (under 18)	_____	<u>X</u>

For each "Yes" answer above, state what precautions you will use to obtain voluntary consent.

Duration of study: two weeks

V. How is information obtained? (Include instruments used)  
Where is information obtained? questionnaire (see appendix B)

VI. Information will be obtained at local community agencies  
Confidentiality - identifiers used (for subjects): See pages 38-40

VII. Benefit of research: To further assist health care providers in planning  
Source of funding: N/A effective programs for hypertensive clients

VIII. Possible risk to subjects: none

IF CHANGE IN RESEARCH OCCURS THE BOARD MUST BE NOTIFIED BEFORE RESEARCH IS CONTINUED.

Proposal Transmittal/Signature Page

INCARNATE WORD COLLEGE

October 18, 1994

(Date)

MSN

(Major)

To: Dean of Division

I submit for approval the following thesis proposal:

Tentative title: [Be concise and state clearly the nature of the proposed research]

The Impact of a Health Education Program on the Attitudes of African-American Hypertensive Clients Regarding Adherence to a Prescribed Medical Regimen

On attached sheets, present concise information covering the following:

1. PROBLEM STATEMENT.
2. PRESENT STATUS OF THE QUESTION. Summarize the previous research in this information area citing any gaps which the study may help to fill. Include definite citations in your summary.
3. PROCEDURE. Indicate clearly the methods you will use in gathering and analyzing data to accomplish the objectives.

[The proposal should not normally exceed 10 pages].

.....  
THESIS APPROVAL RECOMMENDED:

Sara Kalk  
Thesis Committee Chairperson

Teresa Y. McPherson  
Signature of Student

Louise Cardea  
Committee Member

Teresa Y. McPherson  
Student's Name (Print or Type)

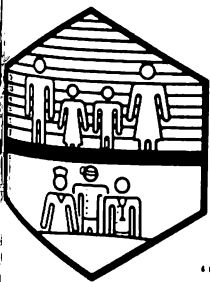
Barton H. Kelly  
Committee Member

(210) 655-0756  
Student's Permanent Number

Bob Connolly  
(optional) Member

10009 Coast Ridge, Converse, Texas 78109  
Mailing Address

Louise M. Cardea  
IRB CHAIR  
Division Dean



ELLA  
AUSTIN

Health Center

"We're A Family Affair"

Appendix D

67

Alva E. McNeal, M.P.A.  
Executive Director

September 16, 1994

Robert V. Kotas, M.D.  
Medical Director

OFFICERS

President  
Ida Givens

Vice President  
Linda Smith

Secretary  
Deborah McGlotten

Chaplain  
Irene Minor

Treasurer  
Earl Bullock

Parliamentarian  
Anna Kinnard

Ms. Teresa Y. McPherson  
10009 Coast Ridge Drive  
Converse, Texas 78109

To Whom It May Concern:

The Quality Improvement Committee at Ella Austin Health Center grants Teresa Y. McPherson permission to collect data at Ella Austin Health Center for the purposes of conducting a research study on the impact of health education on the attitudes of African-American hypertensive clients. Client participation is strictly voluntary and client confidentiality will be adhered to.

Clarify any rules and regulations of the agency regarding reporting findings, publication of the study, and authorship of publication.

Sincerely,

Dr. Robert Kotas  
Committee Chairperson

A Non Profit Organization

Dear Prospective Participant:

I am a graduate nursing student attending Incarnate Word College, in San Antonio, Texas, working towards a master's degree in Adult Health Nursing. I am conducting a study on the impact of an education program on the attitudes of people with high blood pressure. The information obtained from this study might enable nurses and other health care providers to plan education programs that will better assist people with high blood pressure.

The study procedures involve no risks or harm to you. The procedures include:

1) responding to a questionnaire about attitudes, and 2) participating in two educational classes that cover risk factors and recommended ways to reduce your risks of developing complications associated with high blood pressure. Participation in this study will involve taking approximately 10 minutes to complete the questionnaire and attendance at two class sessions lasting approximately two hours each.

Your participation in this study is voluntary; you are under no obligation to participate. You have the right to withdraw at any time and the care you receive at Ella Austin Health Center will not be affected in any way. The information that you share by completing the questionnaires and participating in the class sessions will remain confidential. Upon completion of the study, the results will be provided to you in summary form. Your consent to participate in the study will be acknowledged by completing the questionnaires and attending the class sessions. If you have any questions pertaining to the study or about being a participant, please feel free to call me at (210) 655-0756 or Sara McNary at (210) 224-2112.

Sincerely,

TERESA Y. MCPHERSON, R.N., B.S.N.  
Graduate Nursing Student  
Incarnate Word College

Appendix F



A. Title of Lesson: Hypertension Health Education Program

B. Goal of Lesson: To enhance knowledge level and encourage more favorable attitudes and behaviors regarding blood pressure control

C. Short-term program goals:

1. Members of the aggregate will learn about risk factors associated with the development and progression of hypertension
2. Members of the aggregate will learn the importance of frequent evaluation and long-term management of hypertension
3. Members of the aggregate will learn about dangers to health regarding undetected, untreated, or poorly controlled hypertension

D. Type of Lesson: Cognitive Interaction

E. Instructional Objectives:

1. The participant will identify five risk factors associated with the development of hypertension
2. The participant will identify three major complications associated with undetected, untreated, or poorly controlled hypertension
3. The participant will identify three medically recommended methods for controlling high blood pressure
4. The participant will list three personal goals in order to decrease the risk of hypertensive-related conditions
5. The participant will discuss the importance of long-term management of hypertension

F. Method of Instruction

1. structured teaching with a plan agenda, set day and time
2. lecture
3. discussion
4. demonstration

## Hypertension Lesson Plan

### G. Materials required

1. overhead projector
2. screen
3. transparencies
4. participant handouts on various topics
5. writing paper and pencils
6. videocassette recorder
7. television
8. pretest/posttest

### H. Type of Classroom

1. standard room with adequate seating for approximately 40 participants
2. desk or tables available for writing and placing materials

### I. Teaching Aids

1. transparencies covering topic areas
2. blood pressure monitoring equipment
3. participant handouts
4. videotapes

### J. References

1. Hildreth, C. (1992). Hypertension in blacks: Disease characteristics and unique needs. Consultant, (February), 109-115.
2. Marnalse, R., Bohanek, B., Kopp, C., & Roche, M. (1984). High blood pressure control program--educational sessions: part 1. Occupational Health Nursing, 32(11), 592-599.
3. Marnalse, R., Bohanek, B., Kopp, C., & Roche, M. (1984). High blood pressure control program--educational sessions: part 2. Occupational Health Nursing, 32(12), 636-642.
4. National High Blood Pressure Education Program. (1988). The 1988 report of the Joint National Committee on detection, evaluation, and treatment of high blood pressure. Bethesda, MD: National Heart, Lung, and Blood Institute.
5. Rodman, M. J. (1991). Hypertension first-line drug therapy. RN (January), 32-39.
6. Siegal, B. S. (1986). Love, medicine & miracles. New York: Harper Row, Publishers.



## Hypertension Lesson Plan

### K. Evaluation/Verification of Learning:

1. Compare pretest scores with posttest scores
2. Open discussion/questions during lecture and at the completion of the lesson over objectives covered in each session.

# Hypertension Lesson Plan

## Session One (Part One)

- A. Introduction and background information on:
  - 1. Overview of the educational sessions
  - 2. Hypertension/statistics
  - 3. Pretest
- B. Videotape on hypertension, complications, and lifestyle changes
- C. Discussion of hypertension
  - 1. Definition of hypertension, ranges, and types
  - 2. Risk factors
  - 3. Treatment
  - 4. Consequences of nontreatment
  - 5. Discuss pretest questions

### Objectives for Leader

- 1. Provide background information on hypertension and the educational sessions
- 2. Establish rapport with participants
- 3. Discuss risk factors, treatments, and consequences of nontreatment
- 4. Stress the need for continuous treatment, the asymptomatic nature of hypertension, and the serious consequences of nontreatment

### Objectives for Participant

- 1. Define blood pressure and hypertension
- 2. List risk factors and identify those factors that can be controlled that are significant to you
- 3. Establish a blood pressure "goal" with your doctor
- 4. Explain the consequences of nontreatment

### Preparation

For this session you will need the following:

- 1. Attendance roster (list participants names and scores from the pretest and keep confidential)
- 2. Pamphlets on hypertension
- 3. Pretest and blood pressure I. Q. test
- 4. Videotape on overview of hypertension
- 5. Television and videocassette recorder

### **AGENDA**

Introduce yourself and invite participants to introduce themselves, giving names, reasons for joining the program, and expectations from it. Explain that high blood pressure is the nation's leading cause of premature death and disability, and that the program offers information on the causes and cures of this condition and together with

## Hypertension Lesson Plan

help and encouragement from family, friends, and health care providers, their blood pressure can be controlled with or without the aid of medication.

**Overview of Educational Sessions:** The program will consist of 2 two hour sessions covering primarily two topics per session. In session one, which is today, we will discuss the known risk factors for hypertension, the types and ranges of hypertension, treatment modalities, and the consequences of not seeking treatment. Session one (part two) will cover dietary considerations for controlling hypertension including planning meals, weight control, and monitoring sodium and fat intake.

**Overview of Educational Sessions (con't)** In session two we will discuss lifestyle modifications that one must incorporate in order to reduce the risk of developing hypertension and/or complications such as reducing dietary intake of salt, cholesterol and saturated fats, reducing alcohol intake, managing stress, and avoiding smoking. Finally, session two (part two) will involve a discussion on the different types of medications used to treat hypertension, side effects that may be encountered with these drugs, and food and drug interactions to be aware of while on medications. Additionally, we will demonstrate and encourage participation in checking your own blood pressure, and share any problems, concerns, or ideas that you may have about following a prescribed treatment for hypertension.

Explain that hypertension affects over 63 million Americans. Sometimes referred to as the silent killer, hypertension may go undetected for years exhibiting few if any symptoms. However the result of uncontrolled hypertension can be devastating to the individual, family, and community in terms of financial loss and quality of life. Hypertension contributes to 1.25 million heart attacks and 500,000 strokes each year, as well as contribute to hundreds of thousands of stroke, heart attack, and renal deaths each year.

**Administer Blood Pressure Pretest and Blood Pressure IQ Test**

**Videotape on hypertension, complications, and lifestyle changes**

**Definition:** Blood pressure is the force that circulates blood around the body. Blood pressure measurements check the pressure of the blood against the walls of the arteries. Systolic readings indicate the maximum pressure at the moment when the heart pumps. Diastolic readings indicate the pressure when the heart relaxes. Hypertension occurs when either pressure rises above normal limits. The World Health Organization defines hypertension as blood pressure greater than 140/90 mmHg.

**Ranges:** Hypertension is classified into four stages. Its not important to know the stages and ranges but it is important to know that mild, or borderline hypertension is

## Hypertension Lesson Plan

**Ranges** (con't) indicated at readings of 140/90 to 160/95. Readings above 160/95 indicate moderate to severe hypertension. Diastolic readings above 90 doubles the risk of death from cardiovascular disease.

**Types:** Explain that hypertension does not necessarily indicate tension or nervousness. Most people with high blood pressure show no symptoms at all. Regular check-ups are, therefore, very important. Most cases, 90%-95%, show no obvious cause. This is called primary or essential hypertension. Researchers suspect a combination of physiological, genetic, psychological, and environmental factors to be involved. Although a specific cause has not been found, excellent treatment is available.

**Types:** (con't) Secondary hypertension is the second type and is due to specific causes resulting from certain conditions such as kidney disease, pregnancy, drugs, etc.

**Controllable risk factors** include: diet, weight, stress, smoking, and alcohol intake. Point out to participants that the following factors in diet may cause high blood pressure: excessive salt intake, cholesterol and saturated fat intake, coffee, and alcohol. Sodium, alcohol, and caffeine have a direct association with high blood pressure, whereas cholesterol and saturated fats increase the risk of complications of high blood pressure. Prolonged stress causes a release of hormones which over time affects the heart and blood vessels. Smoking accelerates the heart rate, constricts the blood vessels (which raises blood pressure) and irritates the inside of the arterial walls, rendering them more susceptible to build-ups of cholesterol. Excessive alcohol intake can raise blood pressure and cause resistance to antihypertensive medications.

**Uncontrollable risk factors** include: age, sex, heredity, and race. Explain to participants that blood pressure in our society tends to rise with age. This is not necessarily normal. Causes may be associated with the cumulative effects of stress, poor diet, or other risk factors. Men are more likely to develop hypertension than women and blood pressure readings show rises for men particularly over the age of 35 and women over the age of 45.

**Uncontrollable risk factors** (con't) There is a greater tendency to develop hypertension if it runs in the family, therefore, people in this category must concentrate on controllable risk factors. The prevalence of hypertension among blacks is twice that of whites and the disease tends to be much more severe in blacks than in whites. Mexican-Americans have prevalence rates of hypertension equal to or less than that of whites.

**Treatment:** Hypertension can be controlled by continuous lifelong treatment. It cannot be cured. Reassure participants that their doctors will determine realistic goals for them, based on risk factors, blood pressure measurements, the need for any immediate effect, and the presence of any target organ damage such as kidney problems. Today,

## Hypertension Lesson Plan

**Treatment** (con't) hypertension almost always responds well to treatment and while it cannot be cured, it can be controlled. The primary goal of treatment is to lower blood pressure to acceptable limits and to prevent complications. This usually requires continuous medical treatment for life. Remind participants that their understanding and cooperation are essential.

Sometimes lifestyle changes that reduce or eliminate risk factors can be successful in lowering blood pressure, especially in mild hypertensives. For people who must take medication, lifestyle changes can decrease the amount of medicine necessary to control blood pressure and thereby decrease the potential side effects. Examples of lifestyle changes which help to lower blood pressure are decreasing the intake of salt, cholesterol, saturated fat, alcohol, and caffeine. Additionally, getting regular physical activity, achieving and maintaining a desirable weight, eliminating smoking, and reducing stress can also help to lower blood pressure.

When medication is needed to lower blood pressure, doctors can choose from a large variety of effective medicines. Since people respond differently to medications, it may be necessary to go through a trial period before appropriate medications are found which work best for the individual. Participants should be patient and cooperative and work with their doctors in order to achieve the best results.

**Consequences of nontreatment:** One may wonder why it is so important to treat a disease that has no symptoms. If one feels fine why should one bother with medication? Because prolonged untreated high blood pressure can lead to heart failure, strokes, heart attacks, and kidney damage. When hypertension goes untreated the risk of developing complications--disability, or even death--increases dramatically. Therefore, early detection and treatment of hypertension is essential.

**End session** by discussing the answers to blood pressure I.Q. test and answering any questions participants may have.

# Hypertension Lesson Plan

## Session One (Part two)

### A. Dietary Considerations in Controlling Hypertension

1. Sodium Reduction
2. Potassium
3. Calcium
4. Cholesterol and Saturated Fat
5. Dietary Planning
  - a. Recipes
  - b. Reading Food Labels

### B. Weight Control

1. Implications for Hypertensives
2. General Guidelines for Exercising

### Objectives for Leader

1. Encourage dietary modifications through education
2. Provide information on sodium, cholesterol, and saturated fat reduction, potassium and calcium supplementation, and caffeine and alcohol restriction
3. Provide information on weight reduction
4. Be aware of cultural and lifestyle factors which may influence dietary modifications
5. Offer practical suggestions for dietary modifications for persons dining out or at home

### Objectives for Participants

1. Explain why dietary restrictions of sodium, cholesterol and fat can be of benefit
2. State what foods and other sources are high in sodium, cholesterol and fat
3. Explain the role of weight control in relation to hypertension
4. Develop a positive eating strategy suitable to participant's needs, preferences, and lifestyle

### Preparation

For this session you will need the following:

1. Visual aids e.g., food labels
2. Booklets on low sodium diets and fat controlled low cholesterol meals
3. pamphlets or handouts on tips for weight control and exercising

## **AGENDA**

Explain to participants that session two will deal with dietary considerations for people with hypertension. Point out that a relationship exists between diet and hypertension. For instance, obesity and increased levels of sodium and cholesterol in the body are believed to be contributing factors in the development of hypertension. Controlling these factors can have a positive effect on blood pressure.

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**Sodium** is a mineral that is found naturally in all food. It is recommended that people with high blood pressure consume no more than 2300 mg per day (approx. 1 tsp). The average American diet contains from 5-20 times the necessary amount. Sodium is the second most used additive, sugar being the first. In susceptible people, this overabundance of sodium in the diet increases sodium and fluid retention and contributes to high blood pressure. People with mild hypertension may be able to control their blood pressure by decreasing salt intake. For others decreasing salt intake will help medications to work better and may decrease the amount of medicine needed to control blood pressure.

Sodium used as a flavor enhancer and a preservative, is especially high in processed food such as snack items, fast foods, canned food such as soups, sauces, cold cuts, and many frozen items. Meat, fish poultry, milk and milk product, and eggs contain significant amounts of natural sodium. Animal fats, vegetable oils, cereal grains, fruits, and vegetables contain less natural sodium.

Encourage participants to learn to read labels, and look for salt or any product with the word "sodium" listed among its ingredients, such as di-sodium phosphate, monosodium glutamate, etc. These foods should be avoided, or cut back. Foods should not be purchased unless salt is listed at least sixth from the top on the label (ingredients are listed in order of predominance).

Table salt is 40% sodium, 60% chloride. Suggest adding little or no salt while cooking or at the table, cutting down the amount, or leaving out the salt when a recipe calls for it. This should not affect baking or consistency. Our taste for salt is acquired over a long period. We can retrain our taste buds by gradually cutting back on salt intake. Spices and herbs can be used in cooking to enhance flavors (see seasonings handout). Water softeners add salt to the water supply and should be hooked up to hot water only. Many over-the-counter medications contain salt, and Alka-Seltzer, laxatives, cough suppressants and antacids should only be used with a doctor's approval. Baking soda and baking powder also contain sodium.

**Potassium** is another significant mineral found naturally in the body. A normal potassium level should be maintained, preferably from food sources. Potassium deficiency can cause muscle weakness or cramping, fatigue, nausea, or irregular pulse. If any of these symptoms develop while on diuretics, a doctor should be called at once. He or she may order potassium supplements. Potassium deficiency can be prevented by choosing good sources such as bananas and orange juice.

**Calcium** intake may lower blood pressure in some patients with hypertension. There is no way to predict which patients will benefit, therefore, individuals should get at least the recommended daily allowance (800 to 1,200 mg). However, calcium deficiency is associated with an increased prevalence of hypertension, and a low calcium intake may intensify the effects of a high sodium intake on blood pressure.

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**Cholesterol**, an essential chemical manufactured by the body and is necessary for cell metabolism. If the body produces too much or the individual consumes too much, cholesterol is not fully utilized. This increases the probability of atherosclerosis, in which fatty substances are deposited on the walls of the blood vessels, causing them to narrow. To compensate, the heart must exert more pressure to force blood through the narrow lumen.

Cholesterol and saturated fat reduction are important for the hypertensive individual. The risk of cardiovascular disease doubles in individuals with a serum cholesterol level of more than 255/mgm. All food of animal origin contains cholesterol, but especially high levels exist in egg yolks and organ meats, such as liver and shellfish. Foods of plant origin such as fruits, vegetables, grains, legumes, cereals, and nuts do not contain cholesterol.

Explain to participants that in order to reduce cholesterol levels it is necessary to eat less food containing saturated fats and cholesterol, and use polyunsaturated margarine. All fat should be trimmed from meat and poultry before eating, and foods should be broiled or baked instead of fried. Animal fats such as cream, butter, cheese, beef, and chicken fat contain saturated fats and should be eaten as little as possible. Saturated vegetable fats are found in many solid and hydrogenated shortenings, coconut oil, cocoa butter, and palm oil. People should eat less red meat, more chicken and fish, and use skim milk and skim milk products, and polyunsaturated margarine.

**Recipes:** Go over booklet containing low salt, low fat, low cholesterol recipes

**Reading food labels:** Go over pamphlet containing information on reading food labels.

**Weight Control:** Hypertension is frequently associated with people who are overweight. Obesity is considered a risk factor in hypertension because the heart has to work harder to supply blood and oxygen to extra body mass and fatty tissue. As people gain weight, blood pressure tends to rise. When they lose weight, blood pressure tends to fall. Even a loss of ten pounds can make a difference. Losing weight and maintaining normal weight can help to control blood pressure. Weight control becomes a healthy balance between the number of calories ingested and the number of calories burned up in daily activity and exercise.

Explain to participants that one key factor in successful weight loss is to do it gradually. A gradual weight loss (between one to two pounds a week) helps to develop new eating patterns which are essential to maintaining normal weight. Fad diets should be avoided. Three well-balanced meals a day will help people feel more satisfied, rendering them less likely to nibble between meals. This will also ensure an adequate intake of



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nutrients, including sources of protein, fruits, vegetables, dairy products, bread, and grains every day. Foods low in fat and sugar which, in turn, will lower caloric intake should be selected.

**Avoid saturated fat. Eat less cholesterol. Lose weight. Eat more fiber. It's enough to make a person give up!** Remember you don't have to do it all at once. Even small changes can make a BIG difference in your health. For example, if you need to lose weight, start out by identifying the high-fat foods in your diet. Fat, regardless of the type, contains twice as many calories as carbohydrate or protein. So when you eat less fat, you are likely to consume fewer calories.

Think about some small changes you can make in your diet to decrease the fat. Be creative. And make changes one at a time. Try these suggestions: 1) Instead of tuna in oil with mayonnaise, try water-packed tuna prepared with reduced-fat mayonnaise and save almost 200 calories, 2) Try a mixture of nonfat plain yogurt and low-fat cottage cheese on a baked potato instead of sour cream. Save as much as 100 calories, 3) The next time you order pizza, skip the pepperoni. It can add 50-100 calories a slice, 4) Switch from whole to 1% milk. If you drink two glasses of milk a day, you will consume 800 calories less each week. Each of these changes alone may not make a big difference in your diet--but when you start to add them up you will see some results.

Alcohol is high in calories. Cutting down, avoiding altogether, or substituting wines or light beer for hard liquor should be considered. Moderate to heavy drinking can affect the liver, brain, and heart, causing irreversible damage. There is also some evidence that more than three to four drinks a day can raise blood pressure. Medicine for hypertension may sometimes be affected by alcohol. Doctors should be asked if an occasional drink would be acceptable. If you choose to drink, try to limit yourself to no more than two alcoholic drinks per day, or try unlimited amounts of nonalcoholic drinks like sparkling water with a slice of lemon or lime, soft drinks, or nonalcoholic beer or wine.

People should also avoid or cut down on food or beverages which contain caffeine, such as coffee, tea, cola, and chocolate. Caffeine narrows blood vessels, thus increasing blood pressure, and is also a stimulant which makes the heart work faster. An average dose is about 100mg (one 5-oz. cup of coffee). Doses larger than 250mg (three cups of coffee) can lead to insomnia, nervousness, tremors, and irregular heartbeat.

**Exercise** should be started with a doctor's approval. Brisk walking is very beneficial; people should try to work up to 30 minutes daily. They will have more energy, look healthier, and feel better about themselves. Walk at least three times a week. Start with 5 minutes at a slow pace to warm up. Next, give yourself a brief workout with 5 minutes of

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**Exercise** (con't) brisk walking. Finish with 5 minutes at a slowed pace to cool down. Add 2 minutes to the brisk part of your walk every week. You will be surprised at how quickly your walking program becomes a regular part of your day--and at how much you look forward to it.

## Hypertension Lesson Plan

### Session Two (Part one)

- A. Videotape on Lifestyle Modifications
- B. Discussion on:
  - 1. Smoking and Implications for Hypertensives
  - 2. Stress and Implications for Hypertensives
- C. Specific Tips (e.g., smoking cessation, stress reduction, etc.)

#### Objectives for Leader

- 1. Encourage awareness of the relationship between positive lifestyle habits and improved health
- 2. Discuss benefits of smoking cessation; stress reduction and exercise

#### Objectives for Participant

- 1. Recognize physical and emotional signs of stress and its relationship to hypertension.
- 2. Explain how exercise benefits hypertensives

#### Preparation

For this session you will need the following:

- 1. Videotape on lifestyle changes
- 2. Pamphlets on smoking cessation and stress reduction
- 3. Tape player with soothing music for stress reduction exercise

### **AGENDA**

Explain to participants that in addition to dietary changes there are several other lifestyle modifications which can enhance blood pressure control and make them feel better as well. Mention the videotape, which deals with such modifications as stress management, weight control, and exercise. Then show the videotape, and discuss the lifestyle patterns it illustrates.

**Smoking:** The American Heart Association estimates that if Americans gave up cigarettes, more than 120,000 deaths from heart disease alone could be avoided each year in the United States. Regardless of the amount people smoke, or how long they have been smoking, it is never too late to stop. The risk of heart attack in a person who once smoked but has stopped is almost the same in a year's time as it is for a person who has never smoked. The benefits of stopping begin almost immediately. Most people are aware that smoking can lead to lung disease, bronchitis, emphysema, and cancer. People should also be aware that smoking injures blood vessel walls and speeds up hardening of the arteries. Thiocyanate builds up in blood vessels, narrows them, making the heart beat faster and making blood pressure rise. The immediate effect of a few cigarettes may raise blood pressure slightly, but the cumulative effect of smoking raises the heart rate, increases the work of the heart and increases blood pressure.

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People with hypertension should not smoke. In addition, not smoking increases the HDL level in the blood. This is the "good" cholesterol which appears to have a protective effect against heart disease. Some strategies to follow when trying to stop smoking are as follows: (show overhead)

- 1) Keep a smoking diary for one average week-day and one average week-end day. Record the time, your feelings, location, activity, company and enjoyment level. Look for patterns of association.
- 2) Drink at least a quart of water daily in order to flush out nicotine (this will also help with weight loss). Drink fruit juices such as orange or lemon, to decrease the taste of nicotine.
- 3) Substitute an alternative activity when you would ordinarily smoke. 4) Practice deep breathing. This skill is easily learned, and stimulates that part of the nervous system associated with feelings of relaxation. Practice throughout the day, whenever you feel the urge to smoke or need to relax. The technique involves slow abdominal breathing, muscle relaxation, and concentrating on your breathing. Demonstrate this technique later after the discussion on stress reduction.

**Stress** is the non-specific response of the body to any demand made upon it. We all experience stress. A certain amount can motivate us to get things done, and prepare us to deal with unexpected situations. On the other hand stress can also work against us when too much of it raises our blood pressure, causes us to lose sleep, makes us irritable, anxious, depressed, less productive, or more susceptible to illness.

Too much stress, or inability to handle stress may be very harmful to the body, leading to physical or emotional problems. For someone already at risk with heart problems, an emotional crisis could be a major insult to the cardiovascular system. Worrying keeps us tense and narrows our blood vessel walls. Explain to participants that people perceive stress differently and their reactions vary. The body assumes a "fight or flight" response to various stimuli; raising blood pressure, increasing heart rate, and increasing the rate of breathing. This is helpful in dangerous situations but not in everyday ones.

Stress management does not promise to solve our problems, only to modify our response to them. We can deal with stress in several ways: (show overhead)

- 1) Avoiding hassles helps you eliminate the minor irritations that can lead to chronic stress. For example, if rush hour traffic drives you up a wall, try a carpool, if rushing to work makes you tense, try getting up an hour earlier.
- 2) Controlling change is easier than it sounds. When faced with a positive or negative life change, do what you can to limit other changes. Concentrate on those things you can do something about and don't dwell on the things you have no control over.
- 3) Taking a break puts life into perspective when you're feeling stress overload to the "I-can't-cope" level. Take a few minutes by yourself, sit down, and decide what needs to be done right away and what can wait until later. Take life one step at a time.

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- 4) Finding help is the best solution when you feel overwhelmed, depressed, or unable to deal with stress on your own. Your doctor, employer, clergy, friend, or a mental health agency can refer you to a professional to help you understand and cope with your feelings.

One indicator of stress is muscle tension. A tight neck, stiff back, knotted stomach or a tension headache, as well as other less obvious symptoms such as general fatigue, sleeplessness and irritability, all indicate stress. Relaxation is the opposite of stress. It does not resemble sleep or recreation. Watching television is not relaxation. Relaxation is a unique state which most people do not often experience. Progressive Muscle Relaxation (PMR) is a technique to help people recognize, relieve, and prevent muscle tension by demonstrating how it feels, and how relaxation feels. People become sensitive to muscle tension building up in their bodies from stress and learn to reduce it, using PMR.

### **Demonstrate relaxation technique with music and visualization exercise**

End session by pointing out to participants that different people experience different types of stress and find different relaxation techniques effective. One of the greatest benefits people derive from mastering the skills necessary to deal with stress is increased energy, greater accomplishment, and a general feeling of well-being. Ten ways of dealing with stress are as follows: (show overhead)

1. Develop a positive and outgoing disposition and attitude
2. Learn to be flexible
3. Talk out your problems
4. Eat sensibly and get plenty of rest
5. Ask for help when you need it
6. Learn to pace yourself
7. Deal with the cause
8. Exercise regularly
9. Practice relaxation
10. Get away from it all

## Hypertension Lesson Plan

### Relaxation Exercise

Take a comfortable position. It's generally better to uncross hands and feet, so there's no pressure. Begin to become aware of your breathing, and the motion of your chest and abdomen as you breathe deep in and out. Sometimes repeating a word like "peace" or "relax" to yourself with each breath will help. Just deep breaths, letting the peace in and the tension out. And the music, and my voice, and the sounds in the room will all help relax you. When you're ready, you may look upward and let your eyes close gently. Unwind, erase the blackboard of your mind, and just feel yourself settling down. Perhaps let a wave of peace move down through your body, relaxing the tense muscles, particularly the neck and shoulder muscles, and the jaw muscles, then moving down your body, through your chest and abdomen, next relax your arms let them fall by your side, next relax your fingers, gradually move down to your legs, then your feet and toes. Your body may feel heavy or warm, or it may tingle. Let the relaxation move down through your body. [Pause].

And then in your mind's eye allow a pleasant scene to appear. This is going to be your special little corner of the world off in the middle of nowhere. I'd like you to create all the vivid colors that you know are there, as well as the textures, the aromas, and sounds that you will associate with this place. It's yours. Take a moment to find a spot where you can sit or lie down. And if there is any illness within your body, see your treatment and your immune system eliminating that illness from your body. If there is no illness present, just see your body rejecting illness. See yourself becoming well and becoming the person you'd like to be. [Long Pause]

Now I want you to follow my voice again, and build a bridge from your corner of the world to mine. It'll connect with a path. Look at the bridge you've built, and see what it's like. And then come across to the path. It's covered with smooth gravel, and you'll feel that under your feet. There's warm sunlight, broken up by the shade of trees. And just come down the path with me. Ahead of you, you will see five steps. With each step down you'll feel more relaxed and more at peace. Then ahead of you on the right will be a lovely garden. Enter the garden. Enjoy the aromas, and perhaps touch a petal. See the beauty that exists. Perhaps even hear the birds or other animals that may be living there. I'd like you to pick out one flower and observe its individuality and beauty, and see how much it resembles you in your individuality and beauty. [Pause]

Take a moment now to just float onward, totally at peace, totally free of concern and worry, you are weightless. [Long Pause] Then, when you've completed that, you may follow my voice again, and come back to your special corner of the world. I'd like you to sit or lie there now, and relax. [Pause]

Now step out of yourself for a minute, and look back at yourself. Give yourself the love and affection you deserve. And then step back into your body and listen to it. Go through your body and listen. If there are areas of your body still tense or in pain, see if you can create a healing harmony within yourself.

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Now just let your awareness of your body begin to increase, perhaps noting the position you're in, the pressure the chair makes against your body, the motion of your chest and abdomen as you breathe deeply in and out. And let this awareness begin to increase as you get closer to coming back to the room. Perhaps wiggling your fingers and toes will help. [Pause]

Then, count seven to ten breaths after my voice stops, each breath making you feel lighter, more awake, more alert, yet still at peace, until after the last breath you open your eyes and return to the room when you're ready, beginning now.

Siegal, B. S. (1986). Love, medicine & miracles. New York: Harper Row, Publishers.

## Hypertension Lesson Plan

### Session Two (Part two)

- A. Medical Interventions
- B. Purpose of Drug Therapy
  - 1. General Categories of Drug Therapy
  - 2. Common Side Effects and Food and Drug Interactions
- C. Discussion on the Importance of Long-Term Medical Management
- D. Demonstration and Participation in Checking Blood Pressure
- E. Sharing Concerns, Problems, or Ideas for Medical Regimen Compliance
- F. Posttest, Questions and Answers, and Final Remarks, and Evaluation

#### Objectives for Leader

- 1. Discuss the four main categories of antihypertensive drugs, and guidelines for taking medications.
- 2. Encourage adherence to taking medication by discussing strategies for compliance
- 3. Have available medication fact sheets for each participant, relating to their specific medication

#### Objectives for Participant

- 1. Know vital information regarding your medications
- 2. Develop a set of strategies for yourself to increase your adherence to blood pressure control regimen
- 3. Develop personal goals for controlling your own blood pressure

#### Preparation

For this session you will need the following:

- 1. Fact sheets on specific drugs
- 2. Pamphlets or handouts on strategies for medication compliance
- 3. Blood pressure measuring equipment
- 4. Posttest
- 5. Evaluation forms

### **AGENDA**

Explain to participants that session four will deal with medications commonly used to control high blood pressure. The decision to use medication is based on blood pressure readings, risk factors present, need for immediate effect, and target organ damage. The purpose of drug therapy is to control high blood pressure. Continued use of antihypertensive drugs throughout one's lifetime is crucial in preventing the complications of hypertension.



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There are many relatively safe medications available for the treatment of hypertension today. Today, the risk of developing stroke is four times greater for people with untreated high blood than for people with normal blood pressure. Studies have shown that therapy with the antihypertensive drugs now available can significantly reduce adult mortality and morbidity.

The Joint National Committee on the Detection, Evaluation and Treatment of High Blood Pressure (1988) developed a systematic approach to antihypertensive drug therapy. A "stepped-care" method was recommended. Antihypertensive medications are divided into categories, each representing a step. Treatment begins with a drug from step one. The blood pressure is monitored for a specific length of time. If no effects result the dosage may be adjusted, or a drug from step two may be tried. Medications are prescribed in a sequential manner until the best treatment is found.

Point out that people with high blood pressure respond differently to the same medication for no apparent reason. Physicians will try to find the best drugs for their patients, based on ease of administration, side effects, the desired effect of the drug, and cost. the goal is to lower blood pressure while keeping the individual comfortable. Two different medications may be combined in a single capsule to save cost and reduce the number of pills to be taken per day.

Before discussing the different types of medication, review the physiology of blood pressure. Blood pressure is the relationship between a given volume of blood and the size and tension of the blood vessel. If either the total volume of blood or the resistance of the arteries is affected, blood pressure will change. For example, blood pressure will increase if the body retains, fluid, and decrease if blood is lost, as in severe bleeding. Arterial resistance, causing constriction of the blood vessels, or cholesterol clogging, will cause rises in blood pressure. Drug therapy aims at affecting one of these two elements, blood volume, or vascular resistance.

The major medication categories are (1) diuretics, or "water pills"; (2) Sympathetic inhibitors; (3) vasodilators; (4) Angiotensin converting enzyme inhibitors; and (5) Calcium channel blockers.

**Diuretics** act on the kidneys to reduce fluid volume in the body, thus decreasing blood pressure. They also seem to exert a relaxing effect on the arteries, also lowering blood pressure. commonly prescribed diuretics are: Diuril, Hydrodiuril, Dyazide, Enduron, Aldactone, and Lasix. Diuretics cause urination in greater amounts and with greater frequency than usual. Black patients, who frequently have problems with fluid retention, respond well to thiazide diuretics such as hydrochlorothiazide (HCTZ). When combined with dietary salt restrictions, low or moderate doses of a thiazide diuretics can work well.

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Doses should be scheduled to avoid sleep disturbance, and activities planned to ensure the availability of bathroom facilities. This frequency decreases with continued treatment. As excess fluid is passed, the body loses potassium along with the sodium. Potassium is an essential mineral which maintains balance between cells and body fluids, and aids in muscle contraction and nerve stimulation. Symptoms of low potassium include loss of appetite, muscle weakness, abdominal discomfort, or leg muscle cramping (Review the potassium-rich food list). A common side effect, a dry mouth, can be relieved by chewing gum or hard candy. Aldactone is a potassium sparing diuretic. Unlike most other diuretics, it does not cause a loss of potassium.

**Sympathetic Inhibitors** also known as sympathetic nervous system agents or beta adrenergic blocking agents. Medications in this group include Tenormin, Inderal, Lopressor, Corgard, and Minipress. For about one-third of hypertensive patients, beta blockers are the initial drug therapy. They are usually picked for young, hypertensive men, who have a rapid resting heart rate. Because beta blockers lessen the heart's work load, they are also preferred for hypertensive patients with ischemic heart disease and angina. Beta blockers reduce blood pressure by interfering with the flow of sympathetic nerve impulses to cells of the cardiovascular system. They also act on the blood vessels to keep them from constricting. Each medication in this group acts in its own specialized manner to interfere with this activity, affecting either the volume of blood pumped or the size of the arteries.

As a result of taking beta blockers, some people experience fatigue, drowsiness or orthostatic hypotension, which is a type of low blood pressure related to body position. The drop in blood pressure deprives the brain of blood, making the patient feel faint, dizzy, or weak. This normally occurs as the body adjusts the circulation to the upright position. The stronger antihypertensive drugs may have this effect, and if it occurs physicians will adjust dosages accordingly.

**ACE Inhibitors** Angiotensin converting enzyme inhibitors like captopril (capoten), enalapril (Vasotec), and lisinopril (Prinivil, Zestril) reduce blood pressure in at least four out of five patients who have mild hypertension. Given with a diuretic, these drugs also control moderate and severe hypertension. ACE inhibitors are especially useful in patients with hypertension-induced hypertrophy of the left ventricle, a condition that often leads to congestive heart failure. ACE inhibitors have fewer side effects than other antihypertensive medications. The most annoying side effect of ACE inhibitors is a hacking cough because of a drug induced tickle in the throat causing bronchospasms. Hyperkalemia or increased potassium can also occur, especially in patients who switch to these drugs after taking a thiazide diuretic with a potassium supplement or a potassium-sparing diuretic. Another disadvantage is cost: ACE inhibitors are more expensive than beta blockers and diuretics.

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**Calcium Channel Blockers** such as verapamil (Calan, Isoptin), nifedipine, (Procardia), and diltiazem (Cardiazem), relax constricted arterioles and reduce the high peripheral resistance that leads to elevated blood pressure. Each medication acts somewhat differently on its effect of cardiac function. Blacks and elderly patients tend to respond better to diuretics or calcium channel blockers than to beta blockers or ACE inhibitors. Some of the common side effects that one may experience while taking calcium channel blockers include, headache, dizziness, weakness, nausea, and constipation. Patients should swallow sustained release capsules whole and not to chew or crush them. Advise patients to increase fluid and fiber intake to avoid constipation.

**Vasodilators** are usually reserved for the most difficult cases since they are so potent. They act directly to relax the blood vessel walls. Apresoline (hydralazine) and Loniten (minoxidil) are two examples. Since vasodilators may increase heart rate and increase sodium and water retention, they are usually prescribed in combination with a beta blocker to lower heart rate and a diuretic. Headaches, rapid heart rate, and palpitations may result when vasodilators are prescribed alone. Patients should consult their physicians promptly if side effects ensue.

**Review handout on recommendations for individuals taking antihypertensive drugs.**

Remind participants that to enhance the effects of high blood pressure medication, it is vital to reduce overweight, limit salt intake, manage stress, exercise, and stop smoking. Untreated high blood pressure can be compared to neglected plumbing. If a plumbing system is under high pressure, with deposits building up and connections weakening, it may not be apparent until the whole system breaks down, causing a flood. If high blood pressure is left untreated it can result in a similar catastrophe, namely a stroke or heart attack. If neglected, high blood pressure could cause severe complications such as heart failure, heart attack, kidney failure, and eye problems.

On the positive side, high blood pressure can be effectively treated. It may take time to find the right medication, but the variety of drugs available makes treatment possible with time, perseverance, and patience.

**Demonstration and participation on checking blood pressure**

End session by: 1) developing personal goals for controlling blood pressure 2) taking posttest, 3) sharing answers to posttest, and 4) final questions and answers.

## Hypertension Lesson Plan



### BLOOD PRESSURE I.Q. TEST

#### Circle Your Choice

1. Hypertension means that a person is tense or anxious      TRUE      FALSE
2. Older people need higher blood pressure to get blood to vital organs      TRUE      FALSE
3. High blood pressure has many symptoms      TRUE      FALSE
4. Essential or primary hypertension (high blood pressure with no known cause) can be cured      TRUE      FALSE
5. If a person stops smoking, the benefits will begin almost immediately      TRUE      FALSE
6. In 90% of the cases of hypertension, no cause is found      TRUE      FALSE
7. A person's diet will not affect his blood pressure      TRUE      FALSE
8. Strokes, heart failure and kidney damage are some of the consequences of high blood pressure      TRUE      FALSE
9. One high blood pressure reading means you have hypertension      TRUE      FALSE
10. Normal blood pressure for an adult aged 18 years and older is less than 140/90      TRUE      FALSE

## Hypertension Lesson Plan

### FOODS HIGH IN POTASSIUM

When taking a diuretic (water pill) it is important to maintain a proper balance of potassium. The following list contains foods to eat to avoid potassium depletion. Three servings of potassium-rich foods daily are generally required.

Increase your normal consumption of the following:

#### Fruit

Apples, raw or whole  
Apricots, canned, dried, or fresh  
Avocado  
Watermelon  
\*Bananas  
Nectarines, fresh  
Dates, dried, pitted  
Prunes  
\*Raisins  
Cantaloupe

#### Fruit Juices

Apple, fresh or canned  
Grapefruit, canned  
\*Orange, fresh, frozen  
Prune, canned

#### Vegetables

Asparagus, fresh or frozen  
Beans (navy, pinto, garbanzo, lentil)  
Beans, snap, green or wax  
Brussels sprouts, fresh or frozen  
Cabbage, shredded, raw  
Cauliflower, fresh or frozen, cooked or raw  
corn on the cob, fresh or frozen  
Lima beans, fresh, cooked  
Peas, green fresh, cooked  
Peppers, green, raw  
\*Potatoes, baked  
Potatoes, boiled, no skin  
Radishes, red, raw

#### Miscellaneous

Nuts, unsalted  
\*Bran  
\*Wheat germ

Some foods to avoid: (relatively high in potassium, but also high in salt)

tomato juice, canned  
Sardines  
Spinach, canned  
Carrots, canned  
Lima beans, frozen  
Clams, raw  
Peas, frozen

**\* Especially helpful**

## Hypertension Lesson Plan

### Recommendations For Individuals Taking Antihypertensive Medications



1. Know the names of all medications you take as well as the dosage, purpose and any special instructions. Tell your doctor about any medicines you are taking which were not prescribed by him or her.
2. Always take your medication on time and in the specific amount prescribed. Do not skip doses, change the dosage, or **stop taking your medication** without consulting your physician.
3. Call your doctor if you think your medication is causing a problem.
4. Check with your physician, pharmacist or nurse before taking any over-the-counter medications such as antacids, laxatives, decongestants, sleeping pills or antihistamines.
5. A tendency to feel dizzy or faint upon standing up is a common side effect which may be prevented by the following:
  - a. Get up slowly when changing position
  - b. Lie down immediately if you feel lightheaded
  - c. Avoid excessive alcohol intake, hot baths or showers and sudden cessations of movement after exercise. These all increase the feeling of lightheadedness.
  - d. Raise the head of your bed.
  - e. Avoid standing still for long periods, especially right after taking medications.
6. Avoid consuming large quantities of beer, wine or aged cheese products (especially cheddar). They contain a substance which can raise blood pressure. Natural licorice should also be avoided in large quantities. It can promote sodium and fluid retention and increase blood pressure.
7. Drink fluids, (such as fruit juices and water), that do not contain caffeine. Caffeine (as in coffee, tea, cola and chocolate) may narrow blood vessels and raise blood pressure if taken in large quantities.
8. Nicotine narrows blood vessels. Cigarette smoking should be stopped.
9. If you are taking a diuretic that is not potassium sparing, be sure to eat food high in potassium every day. Symptoms of low potassium are muscle cramps or weakness, nausea, loss of appetite or an irregular pulse.
10. Limit your intake of salt. Salt will work against your medication and can cause further potassium loss if you take diuretics.
11. Constipation can affect the absorption of your medication. Exercise regularly and take enough fluids and roughage to maintain bowel regularity.

## Hypertension Lesson Plan

### SEASONINGS

Salt is not the only seasoning. Here are some of the many others you may use to make your meals interesting:

<b>Beef -</b>	Bay leaf, dry mustard, green pepper, sage, marjoram, mushrooms, nutmeg, onions, pepper, thyme.
<b>Chicken -</b>	Cranberries, ginger, mushrooms, paprika, parsley, poultry seasoning, thyme, sage, tarragon.
<b>Lamb -</b>	Basil, curry, garlic, mint, pineapple, rosemary.
<b>Pork -</b>	Apples, applesauce, garlic, onion, sage
<b>Veal -</b>	Apricots, bay leaf, curry, currant jelly, ginger, majoram, oregano, spiced peaches
<b>Fish -</b>	Bay leaf, basil, chervil, curry, dry mustard, dill, green pepper, mushrooms onion, paprika, parsley, tomato, oregano, turmeric.
<b>Asparagus -</b>	Lemon juice, caraway.
<b>Broccoli -</b>	Lemon juice, oregano, tarragon.
<b>Corn -</b>	Greenpepper, tomato, chives.
<b>Green beans -</b>	Marjoram, lemon juice, nutmeg, dill weed, sugar, unsalted french, dressing, rosemary.
<b>Peas -</b>	Chives, onion, mint, mushrooms, parsley, green pepper
<b>Potatoes -</b>	Onion, mace, green pepper, parsley.
<b>Squash -</b>	Basil, ginger, mace, onion, oregano.
<b>Sweet potatoes-</b>	Apples, cinnamon, nutmeg, brown, or white sugar

### SEASONINGS NOT RECOMMENDED

Bouillon cube, regular	Meat extracts	Pickles
Catsup	Meat sauces	Relishes
Celery salt	Meat tenderizers	Salt at the table
Chili sauce	Monosodium glutamate	Salt substitutes
Cooking wine	Mustard, prepared	(unless recommended by your physician)
Garlic salt	Olives	Soy sauce
Horseradish, prepared w/salt	Onion salt	Worcestershire sauce

## Hypertension Lesson Plan



### PERSONAL GOALS FOR CONTROLLING BLOOD PRESSURE

My goals are to:

- \* Try to get and keep my blood pressure down to \_\_\_\_/\_\_\_\_.
- \* Remember to take my medicine as prescribed by my physician.
- \* Keep track of when I need to refill a prescription.
- \* Call my doctor or the nurse in the clinic before stopping or changing any blood pressure medication or when I have a question.
- \* Carry my blood pressure record to each clinic visit.
- \* Stop using salt at the table.
- \* Establish some other important personal goals.



**Table 4:** Analysis Of Variance For Demographic Variables By Age, Gender, Education Level, and Prior HTN Education

Scale	SS	df	MS	F	p
<b>Age</b>					
Between - m	407.10	4	101.78	1.63	.226
Within - m	811.40	13	62.42		
Between - d	124.34	4	31.09	.339	.848
Within - d	1466.32	16	91.65		
Between - a	76.49	4	19.12	.162	.954
Within - a	1773.71	15	118.25		
Between - st	345.79	4	86.44	1.09	.394
Within - st	1266.50	16	79.16		
Between - sm	1567.50	3	522.50	1.95	.264
Within - sm	1072.00	4	268.00		
<b>Gender</b>					
Between - m	42.25	1	42.24	.575	.456
Within - m	1176.25	16	73.52		
Between - d	.3590	1	.3590	.004	.949
Within - d	1590.31	19	83.70		
Between - a	8.533	1	8.533	.083	.776
Within - a	1841.67	18	84.293		
Between - st	10.72	1	10.72	.123	.725
Within - st	1601.57	19	84.293		
Between - sm	684.50	1	685.50	2.101	.198
Within - sm	1955.00	6	325.83		

**Table 4: Analysis Of Variance for Demographic Variables On Pre Test Scores (continued)**

Scale	SS	df	MS	F	p
<b>Education Level</b>					
Between - m	124.40	2	62.20	.799	.469
Within - m	1089.133	14	77.80		
Between - d	146.44	2	73.22	.900	.425
Within - d	1382.51	17	81.32		
Between - a	163.57	2	81.79	.872	.437
Within - a	1500.43	16	93.77		
Between - st	109.45	2	54.72	.643	.538
Within - st	1447.11	17	85.12		
Between - sm	1541.67	2	770.83	3.51	.112
Within - sm	1097.83	5	219.57		
<b>Prior HTN Education</b>					
Between - m	210.53	2	105.27	1.57	.241
Within - m	1007.97	15	67.20		
Between - d	506.67	2	253.33	4.21	*.032
Within - d	1084.00	18	60.22		
Between - a	430.11	2	215.05	2.57	.106
Within - a	1420.10	18	83.54		
Between - st	311.38	2	155.69	2.15	.145
Within - st	1300.90	18	72.27		
Between - sm	290.08	2	145.04	.309	.748
Within - sm	2349.41	5	469.88		

m - medication, d - diet, a - activity, st - stress, sm - smoking

\* p < .05

### VITAE

Teresa Yvette Ashe McPherson was born in Clearwater, Florida, on January 30, 1959. She was raised in Cleveland, Ohio by her mother and has one sister and two brothers. In 1983, she completed her Bachelor of Science Degree in Nursing at Ohio State University in Columbus, Ohio. Upon graduation, she was commissioned as an active duty 2nd lieutenant Officer in the United States Army Nurse Corps, and currently holds the rank of Major.

She has assumed a number of positions in the Army Nurse Corps including Nurse Manager, Unit Quality Improvement Coordinator, Continuing Education Instructor, and Advanced Cardiac Life Provider and Instructor. She has gained experience in the patient care areas of cardiothoracic surgery, neurosurgery, and critical care. She has held certification in critical care nursing (CCRN) since 1986. Her most recent assignment was as Nurse Manager of an eight-bed Multiservice Special Care Unit in Fort Leavenworth, Kansas. She has received several awards for outstanding military service including the Meritorious Service Medal, the Army Commendation Medal, and the Army Achievement Medal.

In August, 1993, she entered the graduate program at Incarnate Word College where she is currently enrolled in the Master of Science Degree in Adult Health Nursing. Her anticipated date of completion is May 1995. She is married to Robert E. McPherson and they have one son Tyler A. McPherson.

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**This thesis was typed by Teresa Y. McPherson**